THE CANNING TRADE

THE Journal OF THE Canning AND Allied Industries

ESTABLISHED 1878

SINCE 1878—THE CANNED FOODS AUTHORITY

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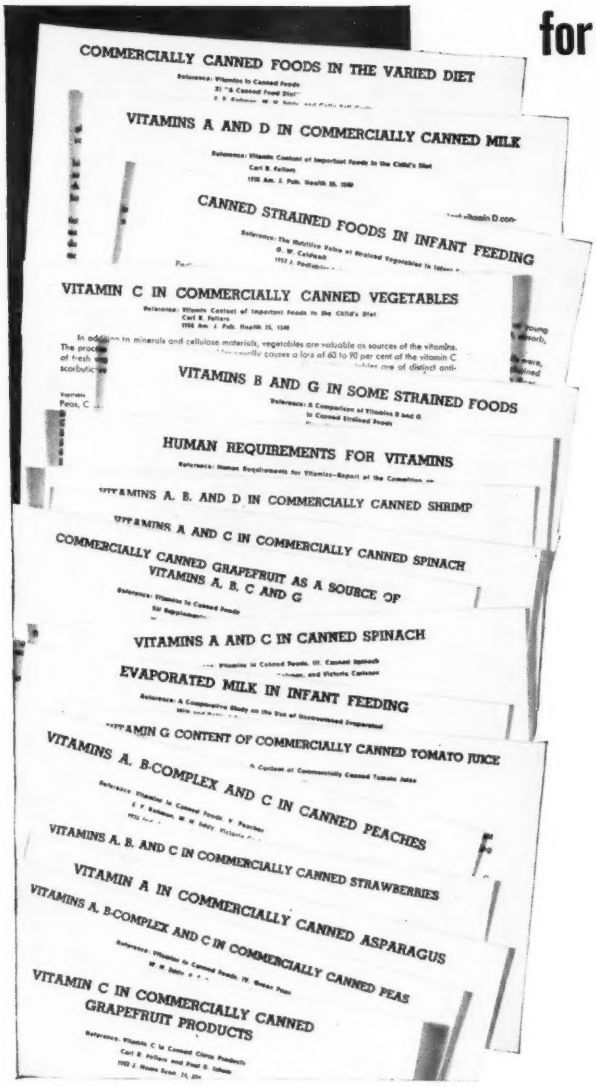
WEEKLY NEWS OF THE INDUSTRY — MARKETS — QUOTATIONS

A NEW and IMPORTANT SERVICE


COMMERCIALLY CANNED FOODS IN THE VARIED DIET
VITAMINS A AND D IN COMMERCIALLY CANNED MILK
CANNED STRAINED FOODS IN INFANT FEEDING
VITAMIN C IN COMMERCIALLY CANNED VEGETABLES
VITAMINS B AND G IN SOME STRAINED FOODS
HUMAN REQUIREMENTS FOR VITAMINS
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VITAMINS A AND C IN COMMERCIALLY CANNED SPINACH
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VITAMINS A, B-COMPLEX AND C IN CANNED PEACHES
VITAMINS A, B, AND C IN COMMERCIALLY CANNED STRAWBERRIES
VITAMIN A IN COMMERCIALLY CANNED ASPARAGUS
VITAMINS A, B-COMPLEX AND C IN COMMERCIALLY CANNED PEAS
VITAMIN C IN COMMERCIALLY CANNED GRAPEFRUIT PRODUCTS

for PHYSICIANS, DENTISTS, HEALTH OFFICERS and HOME ECONOMISTS . . .

A vast amount of nutritional research has been conducted in independent and university laboratories by hundreds of investigators. Much of it has been devoted to the importance of vitamins in general . . . and some to vitamins in canned foods specifically.

As published in the Scientific magazines, this research forms the basis of modern practice in human nutrition.

We have, therefore, assembled the reports made by scientists on vitamins in canned foods and are printing abstracts of them on file cards . . . of the same size and type which physicians use for all their professional work.

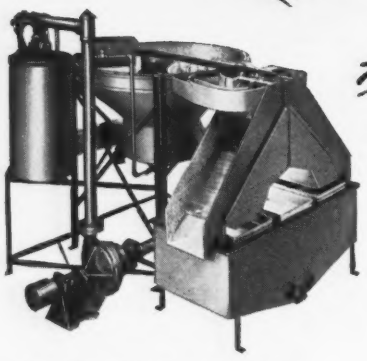
This information is sent to the professions in answer to their questions regarding nutritive values of canned foods. These numerous inquiries from every part of the country are the result of our extensive educational program in medical, dental and home economics magazines.

Physicians, Dentists and Teachers may now refer to them for facts about vitamins in canned foods.

AMERICAN CAN COMPANY

230 Park Avenue CANCO New York, N. Y.

MOVE FORWARD!

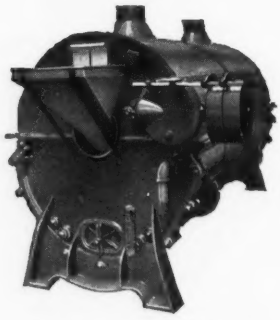


Lewis Quality Grader

Tender peas separated from others with hairline accuracy. Enables canner to get highest possible percentage of finest fancy peas. Peas graded with the Lewis find a quick market and command premium prices.

The Sprague-Sells machines shown on this page are designed especially for the canner of quality peas and beans. These machines are representative of a complete line which will serve you fully and economically. They will step up the quality of your pack and insure top prices in a highly competitive market.

Fill in and mail the coupon below for fully illustrated catalog showing the complete Sprague-Sells line of new and modernized machines for all food products.



Sprague-Sells Blancher

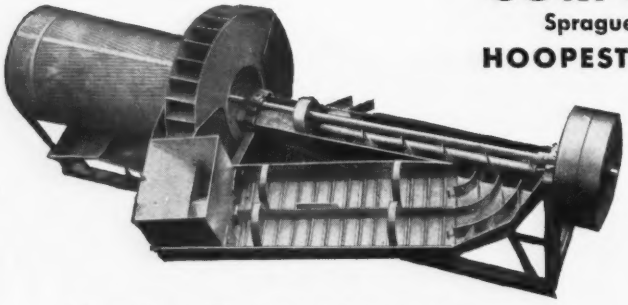
Will not crush or damage the tenderest peas. Most popular with the canner who wants the maximum yield of fancy peas. Builds profits and enhances the canner's reputation for quality. The sturdiest blancher ever offered.

Modern Canning Equipment for All Food Products

FOOD MACHINERY CORPORATION

Sprague-Sells Division

HOOPESTON, ILLINOIS

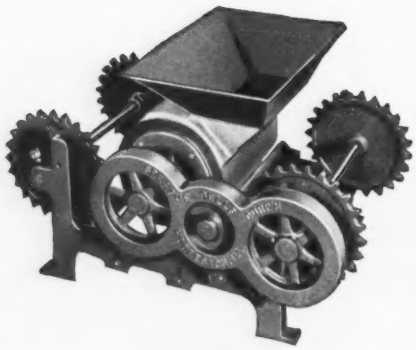


Olney Duo-Washer and Separator

Removes all the light and heavy trash at the same time it spray washes. Cuts down waiting time from vining to canning, insuring greater delicacy of flavor. Especially designed with double capacity for intermittent peak loads on one line.

Twin Reel Cloverleaf Size Grader

Whipping and snaking positively prevented. Amazing saving of peas formerly mis-graded. Peas separated with utmost accuracy, handled far more gently.



Elevator Boot

Loads elevator buckets uniformly and entirely without the slightest damage to peas or beans. Greatly improved over all earlier Boots.

Other Sprague-Sells Equipment—For Pea and Bean Canners

Gooseneck Conveyors . . . Elevators . . . Large Rotary Graders . . . Picking Tables . . . Shaker Washers . . . Rotary Washers . . . Storage Hoppers . . . Pea and Bean Fillers . . . Bean Cleaners . . . Bean Baking Ovens . . . Cook Room Equipment . . . Aphis Control Equipment . . . Etc.

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Sprague-Sells Division, HOOPESTON, ILL.

Please send us your General Catalog No. 400.

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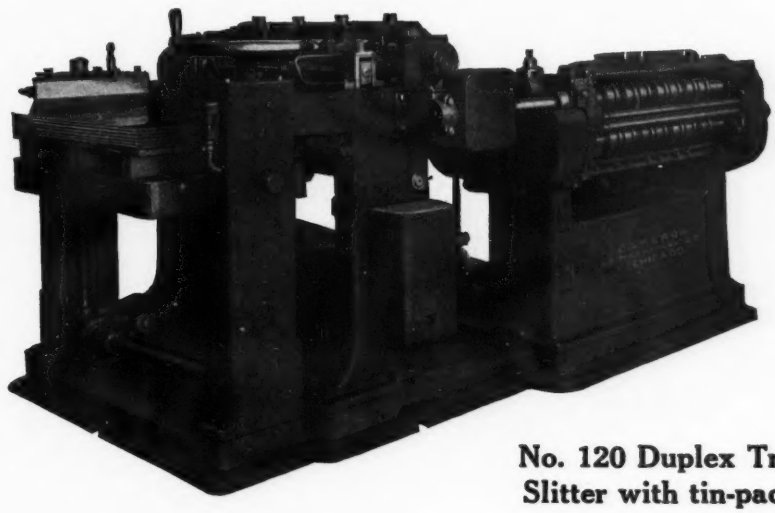

No. 120 Duplex Trimmer and Slitter with tin-package Lifter

The DUPLEX TRIMMER and SLITTER *by* CAMERON

We have acquired the Slaysman patent on this machine and we present our modern device for making body-blanks with speed and accuracy.

Tin-plate now comes in ten-package bundles (1120 sheets). These bundles are loaded directly into the Lifter by a shop-truck.

The "Duplex" and "Lifter" features are plainly labor-saving. Furthermore, the body-blanks are more accurately cut than with a separate Trimmer and Slitter.

A most modern machine for can-makers.

CAMERON CAN MACHINERY COMPANY

240 N. Ashland Ave. **CHICAGO, U. S. A.**

Continental Can Company
NEW YORK · CHICAGO · SAN FRANCISCO

THE CANNING TRADE

Established 1878

The Journal of the CANNING and Allied Industries

EDITORIALS

THE HYPOCRISY OF IT ALL—We have already expressed our opinion that the present upheaval over the Court question is little more than a "tempest in a teapot," so far as the safety of our Constitution is concerned, because on many occasions in the past the number constituting the Supreme Court has been changed, and due to such changing our country did not collapse and disappear as a nation. And whether or not it is done again, now, will have no visible effect, one way or the other. But our daily papers are running the gamut of dire predictions, men of all classes—business, professional and the clergy—are waxing warm over the dangers and threats, or visa versa, as the case may be, a grand pother and tremendous out-blowing of air and opinions—all to what purpose? We begin to suspect that the President precipitated this excitement in order to call attention to one fact—and it is a fact—and that is that all Judges, from the smallest local court up to the very Supreme Court itself, are politically appointed. Digest that a moment and you will be horrified at the thought. Why, politics should be furtherest removed from our courts; as a matter of safety there ought to be a Constitutional prohibition against any man who is or ever was in any way interested in politics, from being appointed to any judgeship.

Fortunately for the good of our country these political appointees have, as a rule, lived up to the high expectations of a judge on the bench, but it still remains true that they are boundened to the party which appointed them; and even where they give no favors at all, one way or the other, but are superior men of the highest calibre, every one of them is under that cloud—of having been appointed by some political party. It is unfair to the decent judges, and a danger to the whole country, and it is about time this bad condition were changed. This is so true that you hear people, and the newspapers, say plainly that the judge is "conservative" or "liberal," which broadly means his political affiliations. Here is real, genuine danger to our Constitution and our country, and if this discussion could but bring about this change it would prove to be well worth while. There ought to be no politics in our Courts.

But now as a fact what are the real "innards" of this Supreme Court discussion? Our Government is divided into three main Sections: (a) the Congress (b) the Executive or President, and (c) the Courts. Now it just so happens that the administrations previous to President Roosevelt, were Republican, and that the present members of the Supreme Court and many of the lower Courts were appointed by them. Recent elections lost them the Executive, and the Congress, but they still have "an ace in the hole," the Supreme Court and the local or district Courts, and these courts can curtail or entirely annul, anything, or all that the other two branches attempt. Doubtless many of the loudest talkers, for or against the President's proposal, do not understand this angle of higher politics, but certainly many, particularly the big politicans on both sides, see and realize the Roosevelt effort to get free of this unfair restraint. But if they have ever said so it has missed our attention. In fact the politicians of all stripes do not want to awaken the public to this high-handed game. And so we say it is again political hypocrisy. If our courts were free of politics, as they ought to be, it would be impossible to play such a game. Understanding what is going on you can adjust your sympathies.

For a judge to resign, no matter what his age, and so give the present Administration the opportunity to appoint someone in his place, would be party disloyalty. So long as the opposition party is in power the judges will hold on until they are 100 years old, or more.

THE LABOR PROBLEM—Events now transpiring under your nose must have caused you to think hard on the time when the canning industry may be the next center of attack by labor. Our turn is coming as sure as "gun's iron." And that is why we have tried to protect you in the selling of futures. Labor is undoubtedly over-reaching itself, and will badly hurt its whole cause, if it does not throw open the door to even worse things, as it did in Spain; but that will not prevent you from having some very unhappy moments if you are sold up heavily on futures.

But there recently came to us a brighter side of this labor question. Read it for yourself:

> "Particularly timely is the present action on the part of many manufacturers who are raising wages and shortening working hours so that their employees may have more freedom to enjoy the comforts of life," said Charles P. McCormick, president, in his talk at the annual meeting of the stockholders of McCormick and Company, held

March 3, at the company's offices on Light Street, Baltimore, Maryland.

"We as a company," continued Mr. McCormick, "have taken the viewpoint of labor and tried to consider its problem as our problem. It has not been a question of paying stockholders the biggest dividend. We reversed the order by thinking in terms of customers first, employees second, and stockholders third. We have been steadily raising our minimum wage until this year it is 65 per cent higher than the peak wage in 1929.

"It did not take Federal or State measures to make McCormick and Company realize the importance of social reforms. In 1932 a carefully planned four year schedule was begun. In September, 1936, the minimum wage goal was reached; all accomplished while still maintaining fair prices to our trade.

"By this gradual building and increasing of wage standards, proposed governmental legislation will not affect us, and the only advance in the price of our products will be on the basis of increased costs of raw materials. It should give our customers a sense of satisfaction to know that they are buying 'priced right' merchandise from a company that is anxious to have its employees earning more than just a living wage. McCormick and Company believe in the 'American Standard of Living.'"

And here is an even better Editorial:

NEW ERA

UNUSUAL frankness was manifest in the address recently delivered by W. H. Tyler, president of National-American Wholesale Grocers' Association, before the annual meeting of the Texas Wholesale Grocers' Association held at Houston.

"After the many months of depression and worry," Mr. Tyler said, "it is a distinct pleasure to meet with wholesale grocers and know that they have definitely passed through the dark days of worry, and are coming into the happy sunlight of recovery and prosperity. I have no fears for you now. If you can carry on and hold your own when everything is against you, I say that the world is yours when the bright days are here. It takes no business wonder to make money in days like these we are entering, but it takes a real merchant to stay in business in depression periods. Do not fail to learn the lesson of the past few years.

"Regardless of your political creed or your ideas as to political economy, you must realize that we are in the early chapters of a most interesting and novel era. Whether all of these innovations are going to put the American people and American business deep in the black and build a road for permanent recovery without the hills of success and the valleys of depression, is for the future to tell. It is sufficient to know that our Government as well as our business must change with the times, and that our policies and plans must mesh with present-day conditions.

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THE CANNING TRADE

"We are all working for the best of it and we are all cocksure that our method of attack and our own particular policies are the correct answers to the best plan of operation. We are a selfish lot; we want our neighbors to be restricted while we remain unfettered. We would deny competitive factors special allowances and yet seek plans to legally receive them ourselves. We want to retain specials for ourselves or our group but we welcome treble damages for our competitors, if he receives that to which we aspire. We can in justice only hope for an even break and without a handicap individual resourcefulness and ingenuity will win in any competition. I also mean that every factor should bear its just burden of taxation.

"It must be the function of the food business, or any other business, to operate within the sphere of economical justification. Operating costs inordinately high will mean that we will be supplanted by more economical operators. We should protest and fight unjust discriminatory advantages over us, but we have no argument against more efficient management. Our own failure will be our own downfall. By the same token, if we are not abreast of the times, if our operating margins are too narrow, our loss means a loss to the entire industry. All losses are eventually absorbed by the consumer, and we must guide our courses to the end that our investors shall have a just return, with the consumer receiving the full measure of value for his dollar. We must be worthy of grace if we are going to survive by the Grace of God."

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CONVENTION DATES

MARCH 30, 1937—Pennsylvania Canners Association, Spring Meeting, Richard McAllister Hotel, Hanover, Pa.

APRIL 7-8, 1937—Tri-State Packers. Spring Meeting, Lord Baltimore Hotel, Baltimore.

APRIL 21-22, 1937—Indiana Canners. Spring Meeting, Claypool Hotel, Indianapolis.

AVOIDANCE OF Cooling Tank Contamination

by G. C. Scott

Minnesota Valley Canning Company, at Canning Problems Conference, Convention of National Canners Association, Chicago, Illinois, January 27, 1937.

THE bacterial contamination of water used for cooling processed cans obviously would be of no importance whatsoever if it were possible to:

1. Manufacture and deliver 100 per cent perfect cans and covers to canners' closing machines.
2. Do a 100 per cent perfect job of closing the cans in the canneries.
3. Handle the closed cans so carefully from the closing machines through the process, cooling, labeling and shipping operations that the perfect cans and seams would not be strained or cracked by so much as 1/250,000 of an inch.

The ordinary micrometer caliper contained in the average mechanic's tool kit will readily measure 1/1000 of an inch. Precision instruments are calibrated to 1/10,000 of an inch. Measurements of magnitudes smaller than 1/10,000 of an inch are accomplished usually by means of optical magnification and such measurements are confined generally to laboratory instruments. Bacteria, however, may vary in size from less than 1/250,000 to 1/250 of an inch. Theoretically, therefore, it is possible that with the finest mechanical tolerance of 1/10,000 of an inch, plus or minus, bacteria of the smaller kind could march through such an opening fifteen abreast. A cubical space having only 1/10,000 of an inch in each dimension could actually house more than 3,000 of such bacteria.

At the present time, therefore, it is economically impractical to obtain 100 per cent degree of perfection in the mechanical operations involved in the manufacture, delivery, closure and subsequent handling of the cans through the normal routine of canning operations. Where water is used for cooling cans following the process, bacterial contamination of this water is important to the extent of the difference between the practical degree of perfection actually obtained in performing the operations mentioned above and absolute perfection.

Cans traveling through a cooling canal or under cooling sprays should have a partial vacuum within the cans at the conclusion of the cooling process and will have minute drops of water remaining on them as they are removed from the cooling chamber. This partial vacuum will, of course, tend to draw into the containers through any minute openings which may be present, varying quantities of such water depending on the amount of vacuum created and the size and number of the openings. Cans may be perfectly satisfactory from vacuum holding standpoint and may meet all accepted tests for hermetic qualities and yet permit minute organisms to gain admission without appreciable loss of vacuum.

The contamination of cooling water systems is influenced by several factors as follows:

1. The bacteria count of the original water used to fill the system and subsequently used in operating the system with the necessary make-up water.
2. The amount of organic matter which is introduced into the cooling system by food particles adhering to the outside of the cans as they are introduced into the cooling system.
3. Temperature of the water in the cooling system.
4. The amount of fresh uncontaminated water that is added to the cooling system during the cooling operations.

Where potable water is used in filling the cooling system and for make-up, the original contamination should be negligible. If, however, river or pond water is used for this purpose, the original bacterial count is likely to be extremely high.

The amount of organic matter which is carried into the cooling system on the outside of the cans influences the growth of bacteria by furnishing sufficient food for them to digest and multiply rapidly. In the absence of sufficient food, the rapidity of multiplication is low. Hence, care at the filler and closing machines to avoid slopping food on the outside of the cans is an important factor. It is suggested that washing the cans as they leave the closing machine may be of benefit in reducing the total amount of organic matter carried into a cooling system.

Most bacteria grow best when supplied with a proper food at a temperature in the neighborhood of 98 degrees Fahrenheit. The flat sour types grow best above 110 degrees Fahrenheit. Hence, when water in a cooling system attains the optimum temperatures for development, multiplication is rapid.

The quantity of fresh uncontaminated water introduced into a cooling system per case of cans cooled is important for the reason that such introduction has a dilution effect tending to reduce the bacterial count per given volume.

In order to obtain some practical information on the effect of cooling tank water contamination, our company conducted a series of experiments at our Montgomery plant during the corn pack of the season of 1931. The general purpose of these experiments was to cool processed cans in cooling water having a contamination normally present in our system and compare results of cans so cooled with results obtained by cooling cans in water as nearly sterile as could be obtained. We chose to chlorinate the water to be used for the sterile cooling media. Mr. G. V. Hallman of the Continental Can Company did the bacteriological work reported herein. The chlorinator used was loaned to us through the courtesy of Wallace and Tiernan Company and their Mr. Farrell was present during a portion of the time the tests were run.

In 1931 our corn pack at Montgomery began on August 17th. The temperature of the cooling tank at the time the plant started was 68 degrees Fahrenheit and a bacteria count of 7,000 bacteria per cc. was obtained within an hour after the plant started operating.

On August 18th, the temperature of the water at the overflow end had risen to 97 degrees Fahrenheit and the bacteria count had gone up to 17,000 per cc. On August 20th the water temperature had risen to 100 degrees at the overflow point and the bacteria count had gone up to 70,000 per cc. During this period of time, clean, potable well water, having a negligible bacteria count, had been introduced into the tank at the rate of about 100 gallons per minute and the rate of operation of the cannery was in the neighborhood of about 600 cases per hour.

During the early morning of August 21st we began chlorinating the water. The chlorine was added near the water inlet at the point where the cans are discharged from the cooling tank. Tests with orthotolidine indicator showed that chlorine was rapidly distributed throughout the canal. The same indicator was used to determine the residual chlorine in the water throughout the test period. By 9 A. M. on August 21st we had a residual chlorine in the water of about one-tenth parts per million. The bacteria count had dropped to 276 per cc. at 9 A. M. and by noon the count was 0 per cc.

Chlorine was fed into the tank during the entire operating period between August 21st and 26th inclusive. The temperature of the overflow cooling water during the period varied from 74 degrees Fahrenheit to 97 degrees Fahrenheit. The residual chlorine during this period of time varied from 1 part per million to 15 parts per million. The chlorinator was hand controlled and some variation in residual was to be expected. Bacteria counts during this time varied from 0-1 bacteria per cc. These counts were made on plain agar and incubated at 98 degrees Fahrenheit. At the start, incubations were made at 98 degrees and room temperature but the counts were so similar that the room temperature incubations were discontinued.

On August 27th the chlorinating was discontinued because of a noted tendency for rusty cans. Chlorinating the cooling water caused it to become a rusty brown in color due probably to oxidation of the relatively high iron content of this water. Rust occurred on the tops of the cans at the code marks and expansion rings.

Approximately 50,000 cases of canned corn were cooled in the chlorinated water and approximately ten pounds of chlorine per day were used throughout the test.

The remainder of the pack was cooled in non-chlorinated normally contaminated water and was used as a control for the cans cooled in chlorinated water.

The results of spoilage obtained on the two types of packs are tabulated below:

Can Size	Product	Swelled Cans per 1,000 Chlorinated Cooling Water	Swelled Cans per 1,000 Non Chlorinated Cooling Water
307 x 302	Vacuum Packed W. K. Corn	0.46	3.44
603 x 408	Vacuum Packed W. K. Corn	0.39	5.17
303 x 406	Cream Style Corn	0.29	1.17
603 x 700	Cream Style Corn	1.37	7.80

It was certainly more than a coincidence that the spoilage rate of all sizes of cans is much less on the days when cooling water was chlorinated. These results illustrate the importance of the use of bacteria free cooling water.

Chlorination of this water alone is probably not the answer, on account of the difficulties from rusty cans. It has been suggested that the use of both chlorine and ammonia, or chloramines, would produce the sterilizing effect desired and give less trouble from the standpoint of rusty cans.

The cost of chlorine used during this test period amounted to approximately $5.00 per day. The cost of full automatic chlorinating and ammoniating equipment is in the neighborhood of $1,800.00. Hand-operated equipment may be obtained, however, at about one-tenth of the cost of full automatic equipment.

The amount of chlorine used per day is dependent upon the amount of make-up water used per day and the amount of organic matter carried into the cooling system. Organic matter rapidly dissipates the chlorine and excess organic matter carried into the system necessitates excessive chlorine additions in order to maintain some residual free chlorine.

•

S. CARLE COOLING, VICE-PRESIDENT

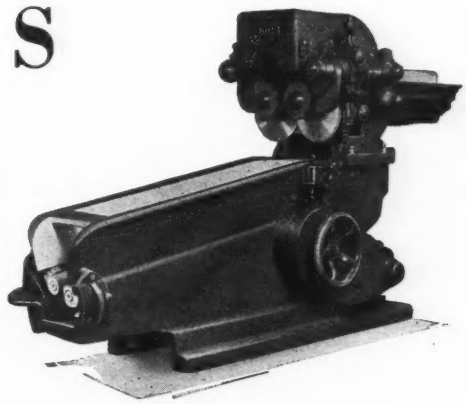
FROM executive headquarters of National Can Company comes announcement of the election of S. Carle Cooling as a Vice-President.

Seventeen years ago, as Manager of Sanitary Can Sales, Mr. Cooling joined the "National" organization, then known as Metal Package Corporation, which acquired the interests of the John Boyle Company at Baltimore.

Going back six years further, Mr. Cooling had risen from the factory and office departments of the American Can Company, to the office management of the Boyle Company and had already displayed the personal and executive qualities which since have contributed to the prestige of his Company in sanitary can trade.

Wherever matters pertinent to the advancement of the Canning Industry have been weighed, "Carle" Cooling has given unselfishly his time and talents for organization. His associates and many friends will join in hearty congratulations upon this signal recognition by his Company.

CORN SAVERS



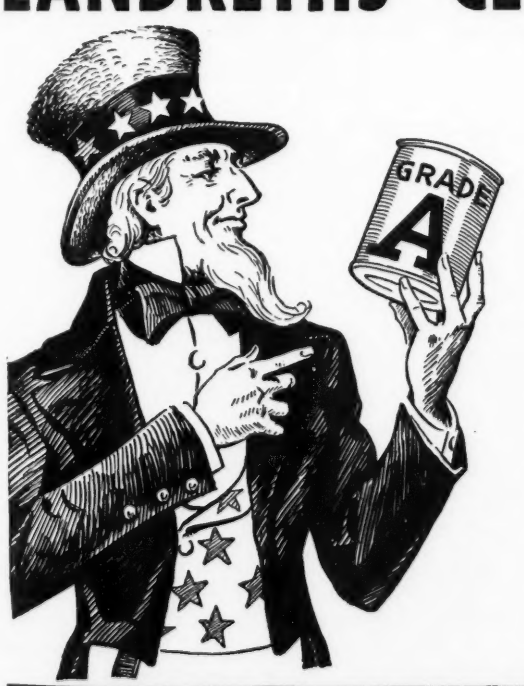
The new *Tuc* **Husker** (right), at unprecedented speed, will pay for itself by the savings of corn alone. The new *Tuc Cutter* (below) produces *many more* cans per ton-of-corn than any other mechanical cutting method.

Both of these ball-bearing-equipped machines are built by one of the country's leading precision tool manufacturers, *Rockford Drilling Machine Division of Borg-Warner Corporation*, at Rockford, Illinois.

Write for descriptive literature covering *Tuc* Corn Canning Equipment and the *Tuc* Method of Canning Whole-kernel Corn.

THE UNITED COMPANY
Westminster, Md.

LANDRETHS' CERTIFIED* TOMATO SEEDS



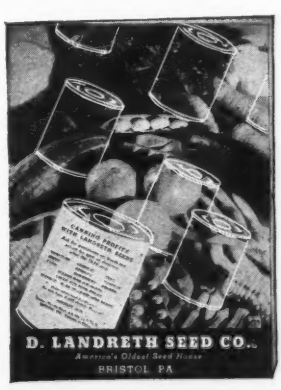
Insure Grade "A" Canning

☆ ☆ ☆ ☆

To meet U. S. Grade "A" standards for canned tomatoes, canners demand the most dependable—the most productive tomato seed available . . . That is why "Grade A" canners insist upon Landreths' Certified Tomato Seed for their annual pack. With Landreth they are assured a quality crop—solid, red, *meaty* tomatoes, free from defects—and *flavorsome!* . . . All Landreth Seeds meet the same high requirements demanded of tomato seeds. For quality packs that insure canning profits, depend upon Landreths' laboratory grown and tested seeds.

Certified by the Pennsylvania Department of Agriculture

The seed you need is listed in the new 1937 Canner's Bulletin. Prices on application.



D. LANDRETH SEED CO. *America's Oldest Seed House* BRISTOL, PA.

Pumpkin-Review of Field Activites of the Past Four Years

by E. J. Cameron

Assistant Director, Research Laboratories, National Canners Association, Washington, D. C., as given in program at the Canning Problems Conference, Convention of National Canners Association, Chicago, Illinois, Tuesday, January 26, 1937.

IN our four years of field work on pumpkin, we have covered large canning sections of the east and middle west and have made some observations in California. In 1933 attention was directed particularly to pumpkin canning in New York. In 1934 work was done in New York and Indiana, while in 1935 and 1936, the field laboratory was stationed in Indiana during the pumpkin packs.

Our study of spoilage problems relating to pumpkin canning has been made difficult by the fact that there was little in the way of standardized practice in canning this product. Everything from simple to very complicated procedure is followed, and the diversification of equipment is remarkable. In the case of no other product have we encountered such a variety of equipment and methods.

Under the circumstances, we cannot interpret our results in general terms, as we have been able to do in discussing peas and corn. However, we have now catalogued a number of sources of contamination and we know which are most important as spoilage hazards. They have been described in previous papers and will again be referred to here in our discussion of prevailing systems of canning. In addition, this discussion will introduce some new observations.

As a logical basis for discussion, an attempt has been made to draw up a classification of pumpkin systems. The classification, as presented, is incomplete—necessarily so, because it would be next to impossible to include mention of the various single elements of equipment which are frequently encountered.

The following classification is based first upon the wilting, or steaming method, and second, upon the treatment of the wilted pumpkin after it has been steamed. So far as discussion of spoilage hazards is concerned, it is proper to begin with the wilting method because prior to this point we have observed nothing which has a direct bearing on spoilage matters.

CLASSIFICATION OF PUMPKIN SYSTEMS

(based upon wilting method)

1. Wilting in retort—usually followed by pressing individual batches.
2. Metal Boxes—a batch method followed by continuous press of inclined type or screw type.
3. Wooden boxes—a batch method followed by continuous presses of the inclined, or screw type.
4. Metal or wooden towers—batch systems similar to 2 and 3, with the exception that the wilting devices are of greater capacity.
5. Continuous metal or wooden box wilters—followed by continuous press or screw type press.
6. Continuous metal tower systems—followed by screw type press.

(based upon treatment after wilting)

7. Pumpkin pressed and juice discarded.
8. Pumpkin pressed, juice concentrated and returned to batch.
9. Pumpkin cycloned without pressing and entire batch concentrated.

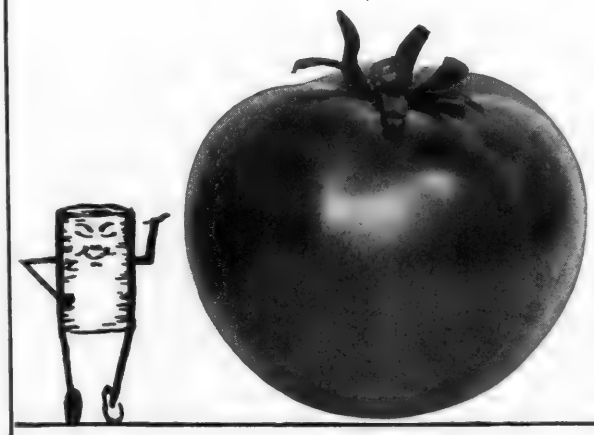
In discussing these various systems, it should be fully understood that they are appraised solely from the contamination viewpoint. There may be individual preferences based upon production considerations, but here we will restrict our discussion to the question of control of spoilage contamination.

The system we have referred to in No. 1, namely, wilting in the retort, followed by pressing the individual batches, is the simplest one studied. As would be expected, this simplicity of treatment and freedom from contact with contaminated equipment results in very low contamination.

By system No. 2 the pumpkin is wilted in metal boxes. After the wilting operation is complete, the batch is carried or conveyed to a press, usually of the inclined type or the screw type.

There is nothing objectionable to the use of these metal boxes, provided that all parts are accessible to cleaning. It should be carried in mind, however, that where steam is introduced through perforated pipes at the bottom of the box, these pipes should be blown out after the box has been cleaned; otherwise, they may carry a mixture of pumpkin juice and water which will serve as a medium for thermophilic growth.

Of the two types of presses mentioned, the screw type is much to be preferred. In a continuous inclined press, of which there are various modifications, but in which the same principle is involved, the pumpkin from the wilter is dropped into a hopper, and carried between two moving belts. The distance between the belts gradually decreases toward the outlet end, and the pressure that is exerted squeezes the juice from the pumpkin. We have never failed to find thermo-



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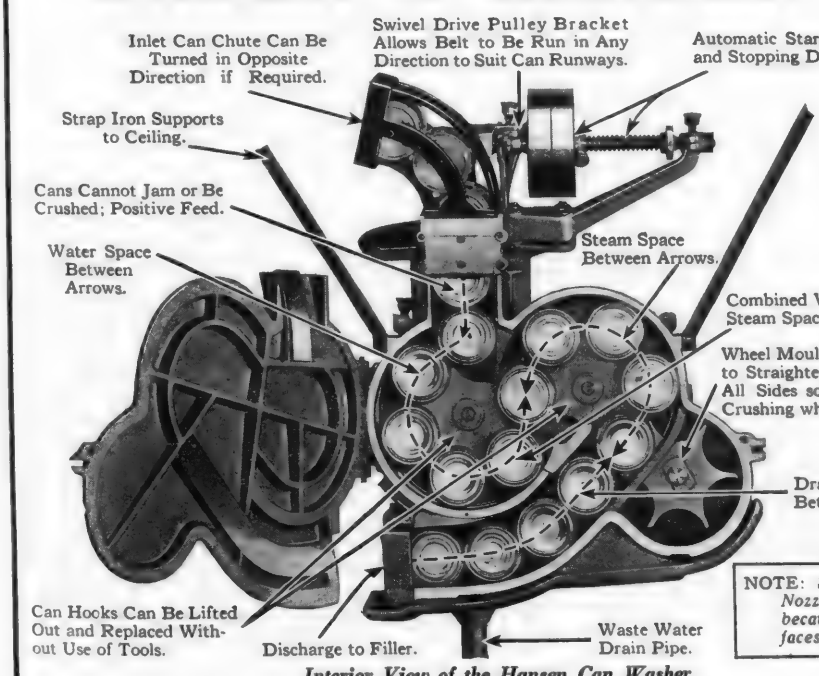
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philic bacteria in juice from these presses. The machine may be seeded with organisms coming from the wilter, but there is a substantial increase in the press itself, due to the favorable growth temperature in certain parts of the press.

In the second, or screw type press, the pumpkin is "wormed" through a tapering perforated screen. As a rule, this equipment is readily accessible to cleaning, and, what is also important, during operation the temperature of all parts is so high (180° F.-200° F.) that no growth is possible. It is encouraging that the screw type press appears to be meeting with increasing favor.

System No. 3 differs from No. 2 in that wooden boxes rather than metal boxes are used for wilting. Our views on the use of wood equipment in the preparation of vegetables for canning are well known, and we do not hesitate to condemn the use of wood equipment in this instance. Bacterial spores may become seeded in the pores of wooden staves and are apt to contaminate successive batches with which they come in contact. Under the circumstances, the use of wood towers or wood boxes is hazardous. For some reason, we have not found thermophilic bacteria to be universally present in the products which have come in contact with such equipment, but we have found them with sufficient frequency to indicate that only hard-surfaced equipment should be used.

Observations on systems No. 2 and No. 3 apply to No. 4.

System No. 5 involves the use of *continuous* metal or wooden box wilters, both of which must be regarded as contamination hazards. They are utterly unadapted to proper cleaning, and, after suspension of work, incubation temperatures are maintained for a period of hours. During this time there is an inevitable growth of spoilage bacteria, and this accumulation serves to seed the organisms into the next day's product. These wilters may be hosed out, but this frequently serves, if anything, to make matters worse. It does not completely remove the food material, and it reduces the temperature of the wilter to an incubation range which is favorable to thermophilic development. We have seldom failed to find high contamination in such equipment.

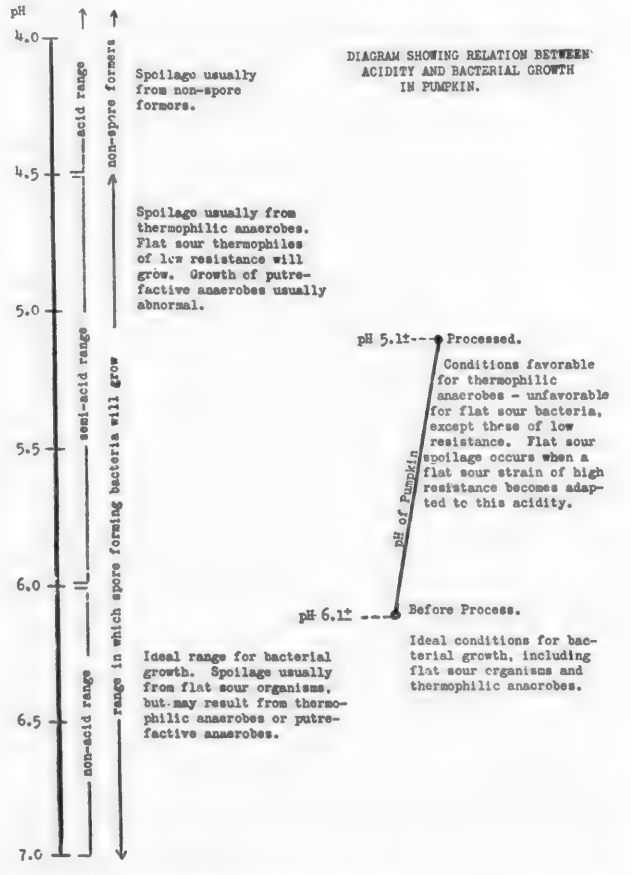
Our remarks made in connection with the use of individual metal box wilters, (No. 2) apply to system No. 6—referring to the use of continuous metal tower systems. The product from continuous tower wilters is, in general, low in contamination. It is advised, however, that provision be made for cleaning this equipment at least once for each twenty-four hour period.

Based upon treatment of the pumpkin after wilting, there are three procedures referred to above as 7, 8 and 9. No. 7 indicates the usual procedure, and whatever its disadvantages may be with respect to loss of soluble nutrients, it has the advantage that most contamination is carried off with the juice.

System No. 8 is applied by a few canners. There is no objection to it provided that the procedure is such as to maintain contamination at a low level. If contamination is high, however, instead of being discarded with the juice, it is concentrated and returned to the product.

Where the pumpkin is cycloned without pressing, and the entire batch concentrated, as indicated in System No. 9, it is especially important to control the contamination factor insofar as it can be done, because there is no way of eliminating any organisms which may enter the product. This procedure calls for some complexity in operation, and attention to equipment and matters of cleanliness are of extreme importance.

At the beginning of our investigation, we regarded it as somewhat surprising that we should find flat sour spoilage in canned pumpkin. This product is in the category of "semi-acid" foods, and where thermophilic spoilage occurs, it is usual to find swells resulting from thermophilic anaerobes. Certain flat sour organisms will grow in semi-acid products, but these as a rule are so low in resistance that they would be destroyed by the usual process for pumpkin. As our work progressed, however, we developed something of an insight into the mechanism of development of spoilage organisms, and this conception is diagramatically pictured in the accompanying chart.


pH
4.0
4.5
5.0
5.5
6.0
6.5
7.0
acid range
semi-acid range
non-acid range
non-spore formers
range in which spore forming bacteria will grow
Spoilage usually from non-spore formers.
Spoilage usually from thermophilic anaerobes. Flat sour thermophiles of low resistance will grow. Growth of putrefactive anaerobes usually abnormal.
Ideal range for bacterial growth. Spoilage usually from flat sour organisms, but may result from thermophilic anaerobes or putrefactive anaerobes.
DIAGRAM SHOWING RELATION BETWEEN ACIDITY AND BACTERIAL GROWTH IN PUMPKIN.
pH 5.1±
Processed.
Conditions favorable for thermophilic anaerobes - unfavorable for flat sour bacteria, except these of low resistance. Flat sour spoilage occurs when a flat sour strain of high resistance becomes adapted to this acidity.
pH of Pumpkin
pH 6.1±
Before Process.
Ideal conditions for bacterial growth, including flat sour organisms and thermophilic anaerobes.

First, this chart indicates the pH range which includes the majority of canned foods. The scale is reversed here, with the highest pH at the bottom because as acidity increases pH decreases, and it seems illogical in a chart of this type to have a falling curve of pH represent an increasing acidity.

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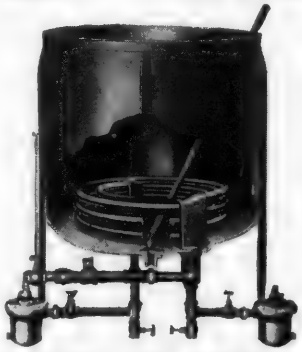

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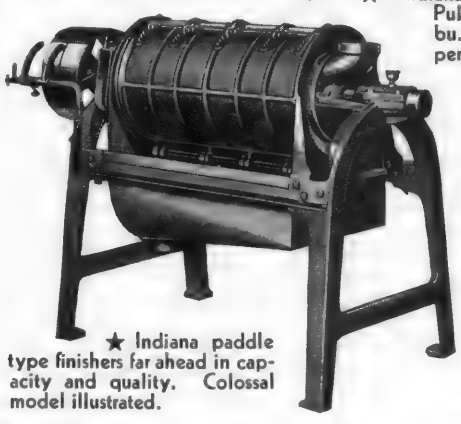

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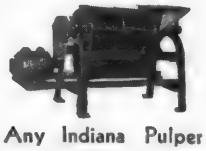

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Next to the range of pH, is our classification of products based on acidity. The so-called "non-acid" range includes such products as peas and corn; the "semi-acid" range spinach, string beans and pumpkin; the "acid" range, tomatoes and other fruits. Further, it is noticed that spore forming bacteria will grow in the acidity range pH 4.5 to 7.0, and below pH 4.5 (higher acidity) spoilage is usually from non-spore forming organisms.

In the semi-acid range, when thermophilic spoilage occurs, it is usually from thermophilic anaerobes. These organisms are not affected by increased acidity to the extent that is true for the flat sour organisms. They will grow well in the pH range 5.0 to 7.0. In this range there may be spoilage by flat sour thermophiles, but in general they have low resistance and their presence indicates an inadequate process.

The ideal range for bacterial growth is pH 6.0 to pH 7.0. In this range, where thermophilic spoilage occurs, it is usually from flat sour bacteria, although thermophilic anaerobes may also be involved. Under the circumstances, how may we account for spoilage in pumpkin caused by flat sour bacteria of high resistance?

Referring to the chart, it will be noticed that the acidity of pumpkin changes materially as the result of the process. During preparation, that is, before processing, the product is in the acidity range which is ideal for bacterial growth. Where the temperature range is suitable, there may be a marked development of flat sour bacteria and other thermophiles, and conditions are conducive to the development of spores of high resistance.

As a result of the process, the acidity is increased to a point where the product falls in the range of semi-acid products—pH 5.1. Under normal circumstances, the only flat sour types which could grow in pumpkin at acidity pH 5.1 would be those of low resistance, and they would be killed by the usual process. Aside from this, flat sour spores of high resistance which develop during the preparation for canning would be prevented from growing by reason of the increase in acidity. Thus no flat sour spoilage would be expected in spite of the existence of high contamination.

The probable course of events leads finally to the adaptation to the high-acidity environment of a flat sour strain, the spores of which are of high resistance. In our laboratory, we have been able at will to adapt bacteria to an acidity range in which no growth originally occurred. We have, therefore, a parallel or precedent for the theoretical picture which has been described. In short, through the use of improper equipment, the canner may finally establish his own spoilage-producing strain of thermophilic bacteria.

THE BOOK YOU NEED ! !

"A Complete Course in Canning."

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Published by THE CANNING TRADE.

IS FERTILIZER EXPENSIVE?

FERTILIZER prices are relatively lower than those of other commodities; fertilizer has been improving in quality; its use results in a 250 per cent annual profit on the investment; and the purchase takes but a very small part of the farmer's income. These are conclusions reached in an examination of fertilizer prices which appears in the January-February issue of *The Fertilizer Review*, published by The National Fertilizer Association.

The cost of fertilizer is measured by three yardsticks—its price in relation to other commodities, its value to the farmer, and his ability to pay for it. The price of a commodity stated in dollars and cents fails to indicate if it is cheap or expensive. In order to determine the relative expensiveness of fertilizer it should be examined in comparison with these related factors.

According to price studies made by the United States Department of Agriculture, the farmer's pre-war dollar is worth today only 79 cents, as the commodities he buys are now selling on the average at prices 27 per cent higher than in the pre-war period. In contrast to this, when the farmer buys fertilizer his pre-war dollar is worth $1.04. Of the 11 commodities or groups of commodities bought by farmers for which the Department compiles price figures, only one is now selling below the 1910-1914 level, and that one is fertilizer.

From March, 1933, when prices were at their low point, until now, prices received by farmers for their products have increased 129 per cent. During this same period prices paid by them for all commodities bought have gone up 27 per cent, but fertilizer has risen only 5 per cent. Another study from a governmental source shows that since 1880 the ratio of the price of fertilizer to all commodity prices has been falling.

Not only has fertilizer been getting cheaper in relation to other commodities but its value has also been increasing and its quality improving. The average ton of complete fertilizer today is not the same commodity as was the average ton 50 years ago or 10 years ago. In 1920, mixed fertilizer used in the United States contained on the average 278 pounds of plant food in each ton. At the present time the average content is about 365 pounds, an increase of 31 per cent. In addition to this increase in plant food content the mechanical condition has been improved, facilitating application and increasing efficiency.

The article then raises and answers the question as to what fertilizer is worth to the farmer. On the basis of six important crops, fertilization resulted last year in an average return of $3.56 for every dollar spent for fertilizer, or an annual return of 250 per cent on the investment. Experiments on corn at Wooster, Ohio, indicate that the farmer who spent $2.75 an acre for fertilizer last year got back in increased value of the crop $16.65 per acre. Results shown by experiments conducted on various crops in many States by agricultural experiment stations all point to the value

(Continued on page 34)

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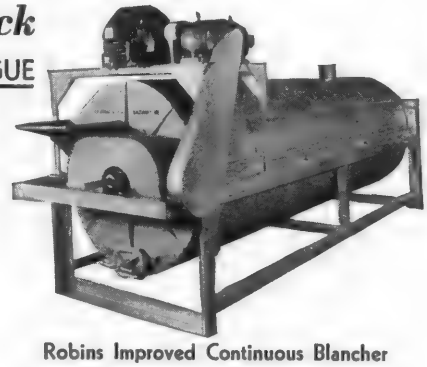

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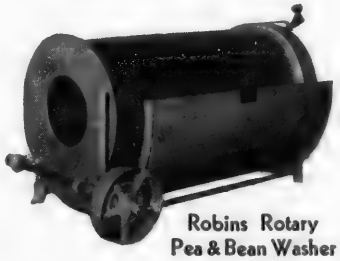

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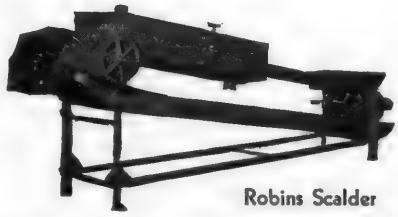

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CAMBRIDGE · MARYLAND, U. S. A.

The Processing of Stratified Products

(Spinach, Asparagus, Asparagus-Pack Beans)

by J. R. Esty

Director, Western Branch Laboratory National Canners Association, San Francisco, California, as given at Canning Problem Conference, Convention of National Canners Association, Chicago, Illinois, Tuesday, January 26, 1937.

HEAT penetration in canned foods containing freely flowing liquid is mainly by convection currents. The general trend of these currents is in a vertical direction, and they consequently seek channels in the product being heated which permit of such motion. Where this progress is impeded or baffled by solid material, the currents flow around the obstruction to the nearest point at which they can pass. For this reason the alignment of certain foods in the can is of the greatest importance as regards heat penetration.

In an article by Dr. A. W. Bitting published in *The Canner*, March 27, 1926, attention was called to the effect of the position of cans in the retort on sterilization. He observed in some experiments involving sterilization of No. 10 cans that near the borderline for time and temperature the cans which had been placed on their sides were sterile, while those standing on end, or at least part of them, were not sterile. The product was a liquid containing solids, the rate of heat penetration tests on No. 10 cans conducted in slowing down, due to the matting of the product. In certain tests he made with agar-agar the effect of turning the container on the side was to shorten the time necessary for sterilization about 15 per cent.

Quite unaware of Dr. Bitting's observations, and incidental to an extensive study of processing spinach, heat penertation tests on No. 10 cans conducted in 1935 indicated a beneficial effect with on-side processing. In a more comprehensive study last year the heat penetration data indicated that the sterilizing value of a given process for No. 10 and No. 2½ cans of spinach is markedly increased by placing on their sides in the retort as compared with placing them on end.

To determine the magnitude and extent to which different sizes of cans might be affected, a number of experimental packs of cans inoculated with a suitable test organism were made in different canneries in order to cover the various accepted canning practices. As to filling the blanched product into No. 10 cans, it was observed that the spinach may be placed in more or less horizontal layers. And also, that the weight of spinach, especially in the No. 10 cans, tends to compress the product in the lower portion in the can. The data from the experimental packs showed that processing No. 10 cans of spinach on their sides greatly reduced the spoilage compared with cans processed in a vertical position, whereas for the smaller sizes of cans the results were not consistent. It is evident, therefore, that the convection currents travel to the center of the No. 10 cans of spinach much faster when these are processed in a horizontal than in a vertical position.

In the case of asparagus the spears are generally parallel and tightly packed lengthwise in the cans. The channels containing liquid are parallel to the spears, and therefore lengthwise of the can. As was expected, tests showed a marked difference in the rate of heat penetration into cans of asparagus spears and asparagus style string beans processed on their sides as against cans cooked in a vertical position, the speed of heat penetration being much greater when the channels were in a vertical position. Based upon the heat penetration studies and spoilage results from experimental packs, it was conclusively shown that all cans of asparagus, except cuts, should be processed in a position such that the spears are upright in the retort. It follows logically that all asparagus style products should be processed in a vertical position.

Products such as peas and cut string beans consist of small solid bodies, fairly uniform in size, evenly distributed throughout a liquid medium, and consequently the rate of heat penetration is little influenced by the position of the cans in the retort.

•

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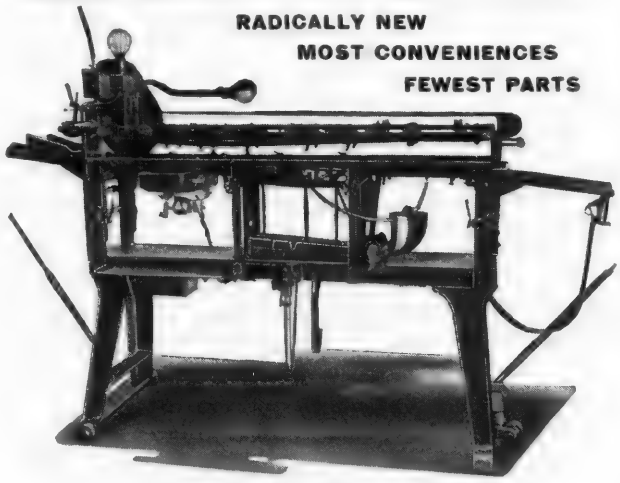

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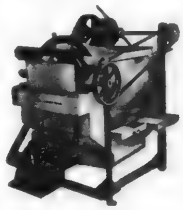

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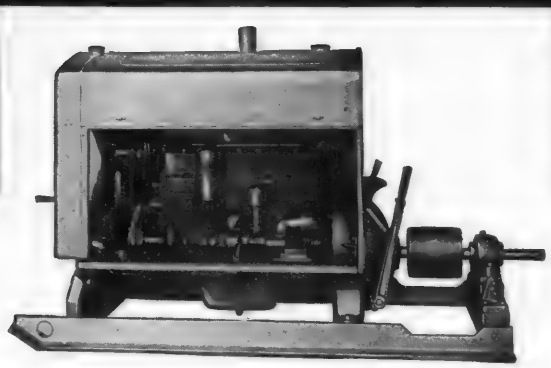

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With Canned Foods Distributors

By "OBSERVER"

Special Correspondent of The Canning Trade

WHO'S "KIDDING" WHO?

"WE have put together a list of super markets in America and when we got it together we discovered some astonishing things," says Gordon Cook in the current issue of *Voluntary and Co-operative Groups Magazine*. "We knew, of course," Mr. Cook adds, "that quite a number of super markets were being operated either undercover or in the open by sponsors of voluntary and cooperative groups and also by chain store organizations. We knew that group sponsors were going into territory outside of their normal territory and where they would not disturb their group organizations and that they were there opening super markets. But the extent to which this had been done was unknown to us.

"We now find that 62 per cent of all super markets are being run openly or clandestinely by sponsors of voluntary or cooperative groups, or by their retail members and we find that about 31 per cent of all super markets are being run by old line chain store organizations which means that only about 7 per cent of these organizations are operated by outside promoters.

"These facts present a ludicrous situation. Those who curse the so-called super markets loudest are the voluntaries, cooperatives, and chain stores; yet facts reveal that the actual operators of these outlets are the voluntaries, the cooperatives and the chain stores.

"Repeatedly we have said that we see nothing wrong with the super market. It is a natural evolution founded on merchandising practices which were established by the chains, the voluntaries, and the cooperatives. These fundamental merchandising practices have merely been materially expanded. If the things that we ourselves are doing are sound in principle, then why should we object to their use on a larger scale. Why should a group sponsor make a great hue and cry to its retail members and to the community about the super markets that are competing with it and its retail members when the sponsor himself has gone outside of his logical territory and perhaps across a state line and is there operating one or two or three or more super markets? Certainly the chain stores have no ground for complaint when they are operating super markets right in their own logical territory, and to make the picture complete and perfect, we find retail member after retail member of voluntaries and cooperatives operating super markets. Thus it is seen that the super market has brought no new faces into food distribution.

"We see absolutely no season why a sponsor of a group should not operate a super market at a point where it does not injure its retail members. We see no reason why a chain store operator should not operate a super market. The thing we do not understand is why they cry about super markets or why there should be anything under cover in connection with who is operating these markets."

MORE CITATIONS

THAT the Federal Trade Commission has not been asleep at the switch in regard to Patman Act enforcement is indicated by the commission's action this week in issuing a blanket citation charging 11 leading corporate food chains with violation of the brokerage clause of the law.

Procon Grocery Service Co., jointly controlled by the chains involved, is also made a respondent in the commission's complaint, which alleges that the respondents received brokerage payments for services which were not rendered the payers. The commission has called for replies from the respondent companies within 20 days.

Respondent companies are Kroger Grocery & Baking Co., Cincinnati; American Stores Co., Philadelphia; First National Stores, Boston; National Tea Co., Chicago; Safeway Stores, Inc., Oakland; David Pender Grocery Co., Norfolk; Southern Grocery Stores, Inc., Atlanta; Eisner Grocery Co., Champagne, Ill.; Steiden Stores, Inc., Louisville; Danahy-Faxon Stores, Inc., Buffalo; and the Fisher Grocery Co. of Springfield, Ill.

"Procon Corporation," the commission complaint alleges, "acts as purchasing agent exclusively for the chains named in the complaint, and upon their orders purchases merchandise for them alone from manufacturers, processors, importers and distributors. In the course of its buying transactions, Procon allegedly collects and receives from the selling concerns brokerage fees or commissions, ranging from 1 to 10 per cent of the quoted sale price, which it pays over to the respondent chain companies."

These practices, the commission charges, are in conflict with the brokerage provision in the Patman Act "in that the fees referred to are not received by Procon as payment for any services it rendered to the sellers of the merchandise in question, but on the contrary, are accepted for the benefit of the respondent chain groups and for the purpose of being paid over to them."

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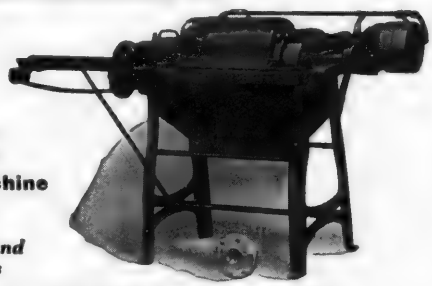

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ARTISTIC LABELS

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VARNISHED.
EMBOSSED.

THE SIMPSON & DOELLER CO.
BALTIMORE, MD.

Jobbers Labels Build No Canner's Business

By "BETTER PROFITS"

Special Correspondent of The Canning Trade

LEST some hurried canner did not take the time to read the article, or it did not even reach his office, I will repeat here excerpts from address by John R. Bromell, of the Bromell-Alderson Co., merchandising experts at the Convention in Chicago:

> **"As to the future trends in grocery wholesaling, it is apparent that cash-and-carry is going to increase in importance, the voluntary groups are going to increase rapidly in both number and importance, wholesalers are going to continue to expend their sales energy on long-margin private label goods at the expense of low margin, high demand goods."**

Do these remarks call to your mind anything written in these columns time and time again? Quoting again from the address mentioned we find that from 1930 to 1936 wholesale voluntary groups expanded in number from 273 to 505, a gain of 86 per cent. The number of members per wholesaler increased from 126 in 1930 to 153 in 1936. It is apparent that not only the number of wholesale grocers interested in voluntary co-operative merchandising groups is increasing, but the number of retailers interested in such a movement is also increasing.

For the purpose of this article we will consider both the facts set forth thus far and the further statement of Mr. Bromell, that the wholesalers are going to, more and more, expend their sales and merchandising efforts on long-margin, private label goods. It is hardly possible that anyone watching trends in grocery merchandising will disagree with this forecast. The situation is not as forbiding as one might think at first glance if the canner vitally concerned will take the necessary steps to offset such a course on the part of those whom, until the present, have been good customers year after year. In drawing this conclusion I am thinking, of course, of the canner who is unwilling to let his factory labels go unrecognized by the housewives who buy his pack year after year. The canner interested in private label business may take heart from suggestions to be given here, but the canner most concerned from the standpoint of the greatest good to the largest number is the canner anxious to create sufficient consumer interest in his own brand to enable him to sell his normal output under his own labels.

To all such, whether or not they are willing and able to enter into voluntary co-operative advertising arrangements I make the earnest suggestion that this year they support their sales and distribution with as much resale work to the retailer as they are able to finance within reason and arrange for on the part of worthwhile distributors. It is apparent that in every case they may have to make arrangements for such work in territories where customers will also be selling private label goods, but after analysis, such territories are most in need of the work. Increasing expenses of wholesalers, increased competition, other factors as well all prompt the jobber to adopt his private label. Once in stock, with goods contracted for with which to fill orders, any jobber would be foolish to give to a canner's factory brands the support the jobber's own labels demand, if they are to be as profitable as they should be.

The die is pretty well cast at last. The canners of the country can go along as they have been going in most cases, selling their products without identity in the minds of the users, or they can take a decided stand in favor of selling their own goods under their own labels. Certainly no one will argue that any increase in purchases of private label canned foods this year by wholesale distributors will not weaken considerably the position of the canner supplying them. Gloss over the matter as you see fit, but you can't escape the fact that canned foods sold under the distributor's label, no matter how splendid the distribution, do nothing toward establishing the canner's business, except as it depends on the continuance of the buyer's favor. Let your jobber of years' standing decide to buy his private label requirements elsewhere, and the housewives in his city will never miss your goods as long as the ones bought under the jobber's brand as somewheres near as good as those you have been supplying. Sell ten thousand cases of your labeled stock in a market, however, and if your distributor wants to switch his business you do have a substantial leg to stand on.

When arranging for retail work in support of your sales, consider the type of jobber for whom you are working. Remember the statement that cash and carry jobbers will increase in number. Recall too that many wholesale houses, retail owned, have only a desk force of salesmen in many instances, that customers often call for their goods. When dealing with all such houses, and in fact, all jobbers for whom you do re-sale work, have it clearly understood with them that all orders taken will be filled when finally accepted. Let your customer make this matter plain to his customers in order that you may not have your labor for nothing. Even after such an understanding has been reached, as it usually is, the number of retail orders unfilled after the season's end is alarmingly large. Try as you will you cannot avoid this.

There is a way, however, that delivery of retail orders can be insured when a retail salesman is working from spot stocks, and to a certain extent in connection with futures as well. Instruct all such salesmen to carry a few cases of product with them when calling on the trade and have these sold for cash, and delivery

made at once. Inasmuch as the stock came from the jobber in the first place, and on his usual basis of profit, he cannot complain and your retail customers certainly will not. Each case sold and delivered means another case in retail stocks that might not have been delivered if it had been handled in the routine way. It may be that you will not always be able to arrange for such delivery service, but if your money is not too abundant, better make a good showing in half the markets you would otherwise have covered and see to it that the goods are placed in the hands of the retailers.

If you are not able to arrange for this in every case, and have been selling futures, at least have your salesmen call back on key retailers after your Fall shipments arrive, and have them note after checking, the movement of delivery according to contract.

If you sell some of your surplus for private label, and are working to establish your factory labels, you may find yourself in competition with goods from your own plants. When this happens the situation may be worked out satisfactorily to all parties. The facts are, if you are working through a house willing to work with you, and are in competition with goods packed in your plants and sold by another customer under his label, you will have a price advantage in favor of your brands and at the same time have equal quality, to say the least. In case you are meeting competition from a pack sold at a base-price lower than you can make on your own factory labeled goods, you will be cutting stock of superior quality and you'll have little difficulty in getting the business.

As far as working for the out and out cash and carry jobber is concerned, you will be practically forced to see to it that your goods are delivered to retailers. Unless you place a floor salesman with the house and he sells all possible to customers as they visit the warehouse. This plan of working is often followed with complete success.

However you work out your sales problems, plan on working as far as possible with voluntary co-operative groups, or those wholesalers offering you an absence of competition from private label merchandise. In some instances you have no doubt already been told this Spring, by more than one customer, that they will be willing to take on your pack this Fall under their private labels, and that they will, of course, sell your factory label line whenever the customer demands it. Or that you may work the trade and they will fill the orders. Do not be misled by this friendly attitude on the part of old acquaintances! Remember that the purpose of a private label line is the carrying of an extra margin of profit. The private label line will be sold whenever possible, and you may depend on that. Get another distributor not mixed up with private labels; give him all the support you can and delay as far as you can the day when the buyer tells you he can buy the ten thousand cases for which he is in the market from another packer and save (?) 5 cents a dozen. Or that he is sorry that your line (if you leave it with him and his private label) did not repeat after opening orders had been filled, that the demand all seemed to be for their prviate label!

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GRAMS of INTEREST

THE GET-TOGETHER COMMITTEE of the Allied Industries has arranged to care for their canner friends in convention in elaborate style. They will be hosts at a luncheon to the Pennsylvania Canners Association at their Hanover convention March 30th, and to the Tri-State Packers Association with dinner and entertainment on the evening of April 7th, at the Lord Baltimore Hotel, Baltimore. R. A. (Bob) Sindall, A. K. Robins & Co., heads the committee as chairman; James F. (Jim) Cole, Continental Can Co., treasurer, and Frank D. Throop, American Can Co., secretary.

•

STOCKHOLDERS of the Shawano Canning Company, Shawano, Wis., recently met and elected King Weeman, president and treasurer; A. C. Weber, vice-president, and Allen Weeman, secretary. Officers of the affiliate Clintonville (Wis.) Canning Company are: A. C. Weber, president; King Weeman, vice-president and treasurer.

•

IN A BULLETIN to members, the Canners League of California is directing attention to several new trade agreements, duty reductions and rulings on labeling. In the new trade agreement between the United States and El Salvador, a reduction of 83 per cent has been made in the duties on canned salmon and canned mackerel. The duty on canned peaches, pears and fruits for salad has been reduced by 74 per cent and that on canned asparagus, peas, corn, tomatoes and tomato juice by 80 per cent.

Panama has made a revision in tariffs and the duty on tomato juice has been reduced from 30 cents per gross kilo to 20 cents. Canned tuna fish is now dutiable under the law. Germany has made a ruling permitting the importation of canned tomatoes and certain other vegetables and fruits, for which monopoly control has been established, providing these are sent as gifts in quantities not exceeding 5 kilos net.

•

ADVERTISING OF THE AMERICAN CAN CO. in medical and dental journals has brought so many requests for reprints of articles on the nutritional values of canned foods that the company has prepared a set of seventy-five abstract cards from literature on the subject for distribution on request.

•

JOHN SORENSON, Ellenburg, Wash., heads a group of growers responsible for interesting capital in the establishment of a pea cannery there to operate this coming season.

•

THE TUC HUSKER bulletin made its appearance during the week, attractively illustrating and fully describing the working parts of the machine and its advantages. The United Company, Westminster, Maryland, will be glad to forward your copy upon request.

CALIFORNIA PACKING CORPORATION has arranged to erect a new warehouse at Rio Vista, Calif., at a cost of $50,000.

•

SOUTH CAROLINA SEAFOODS CORP. is building a cannery at Beaufort, S. C., to pack vegetables and seafoods.

•

"SELLING FACTS worth knowing about canned Peas" is the title of bulletin prepared and being distributed by the American Can Co. as an aid to grocers which gives the answers to questions most frequently asked by customers. Included in the booklet is a chart showing actual pea sizes, the names under which they are usually found and how they are generally served. Several pages are devoted to helpful display suggestions.

•

CANNED TEXAS GRAPEFRUIT JUICE PURCHASED BY AAA FOR RELIEF DISTRIBUTION TO STATES

ACCEPTANCE of offers for 142,000 cases of Texas canned grapefruit juice for delivery during the two weeks ending March 21 was announced March 6 by the Agricultural Adjustment Administration. All offers which have been made to date by Texas canners have been accepted and purchases of canned grapefruit juice by the AAA in Texas up to March 21 will reach a total quantity of approximately 393,000 cases.

The citrus fruit purchased by the AAA is for relief distribution to the States through the Federal Surplus Commodities Corporation.

In reply to a communication from J. E. McDonald, Commissioner of Agriculture of the State of Texas, requesting an increase in the purchase of fresh grapefruit during the balance of March, the Secretary of Agriculture pointed out that the AAA had made arrangements to purchase substantially larger quantities of fresh fruit than had been offered during recent weeks. It also was emphasized that if the maximum volume of fresh fruit is to be moved into relief channels, the citrus industry must deliver much larger quantities immediately rather than delay offerings until the latter part of March when time and distribution facilities will limit the total quantity of fruit which can be absorbed by these outlets.

Purchases of fresh grapefruit in Texas during the week ending March 5 totaled 144 cars, making the volume of fresh fruit purchased so far this season amount to 1,177 cars. The AAA is prepared to accept a substantially larger volume of both fresh fruit and canned grapefruit juice during the balance of March if the citrus industry desires to move such fruit into relief outlets.

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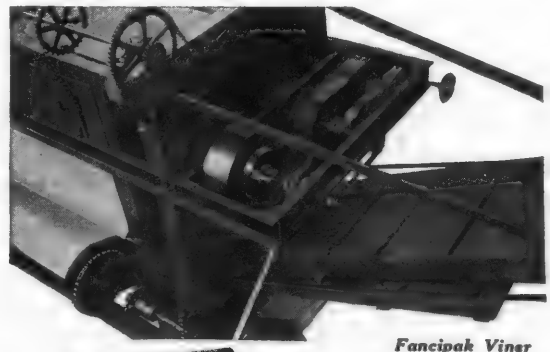

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Tidewater Canners' Convention

Tappahannock, Va., March 9th, 1937

THE Spring meeting of the Tidewater Canners Association of Virginia was held in the Court House at Tappahannock on March 9th. All of the speakers dealt with subjects of vital interest to the canning industry and there were present a large number of canners from this section who showed their interest by asking a number of questions of the speakers and engaging in an animated discussion of the various topics considered.

The meeting was opened with prayer by the Rev. Edward B. Guerry of Tappahannock. The first speaker, Mr. S. S. Smith, Director of the Virginia Division of Dairy and Foods, gave a brief outline of the work of his Division. He was followed by his assistant, Mr. N. A. Lapsley, who went into detail as to how this work would affect the canning industry. He stressed the fact that adequate inspection within the State of Virginia would prevent the rejection or seizure of canned foods from Virginia, and pointed out that during the past year there had not been a single seizure of Virginia apples for spray residues, due to the effectiveness of the State inspection.

GRADING PACKS—Mr. Lapsley went on to say that it was the intention of the Division this year to send a qualified grader from the Division along with each inspector, and that canned products would be graded in the factory or cannery warehouse and that where substandard products were found, an embargo would be placed on them and they would not be permitted to move unless properly labeled as substandard. Mr. Lapsley also pointed out the importance of each packer coding his pack and marking the cans in such a way as to permit each day's pack to be readily segregated. Otherwise, said he, the poor quality of one day might imperil the sale of a number of day's good quality.

BUYING RAW STOCK ON GRADE—The next speaker was Mr. Bier of the Federal Grading Service of the Bureau of Agricultural Economics, who spoke on the advantages of grading the raw stock. This talk and the discussion which followed brought out the fact that buying on grade identifies the interest of the farmer with that of the packer and consumer, pays a premium for good quality and puts a penalty on poor quality, while buying on a flat price pays a premium for poor quality and puts a penalty on good quality. It was stated that if one of two neighboring canners, otherwise equal, was to buy on grade while the other bought on a flat price, in the course of a few years most of the growers of good tomatoes would be selling to the packer who bought on grade, while most of the growers of poor tomatoes would be selling to the packer who paid a flat price.

Mr. J. H. Meek, Director of the Division of Markets, then spoke on the cost to the canners for the inspection service for grading cannery tomatoes, and outlined plans which would make it possible for even the very small canner to have this service without placing too heavy a burden on him. He brought out the fact that the benefit from the various services in the long run more than pays their cost. He then spoke on the service performed by his Division in certifying the grade on the label for tomatoes. Under this service the canner enters into a contract with the Division of Markets under which he agrees to abide by the regulations of the Division regarding this service. The procedure is essentially as follows:

The canner's plant must first be inspected and approved by the Division of Dairy and Foods. The canner agrees that he will code his pack in such a way that each day's pack may be easily segregated from every other day's pack. A local inspector, usually a foreman in the factory, is appointed whose duty it is to maintain a constant supervision of the packing operations, to make out a report for each day's pack, giving the number and size containers and the code mark, and to draw representative samples for each day's pack. A supervising inspector, who is a trained employe of the Division of Markets, visits each factory in his district two or more times a week, checks up on the operations and the local inspector, and examines and grades the samples drawn by the local inspector. He then issues certificates for the individual lots which are found to comply with the requirements of the several grades, standard, extra standard, and fancy, and only those lots for which such certificates have been issued may be labeled under the State Certified Labels. In addition to this, whenever the packer makes a sale under the State Certified Label he must report it to the Division of Markets, giving the buyer, the brand, number of cases, size of container and code marks, making the policing relatively easy. Use of the State Trade Mark without complying with the regulations makes the packer liable to prosecution for misbranding.

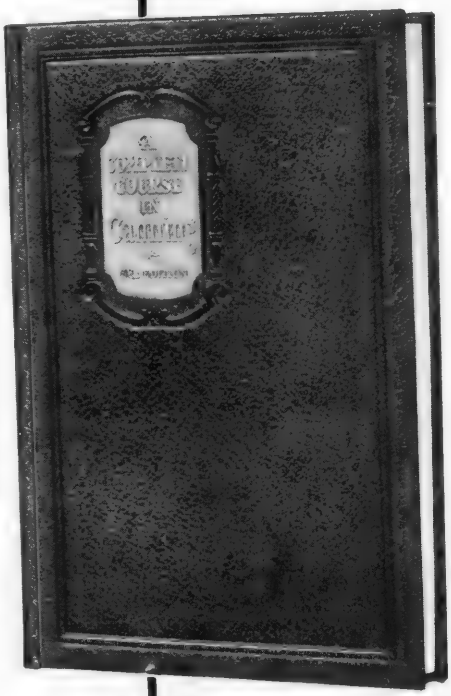
BETTER GROWING METHODS—Mr. E. R. Lancashire, raw products expert for the Continental Can Co., then spoke on growing quality tomatoes in hot weather. He emphasized the advantages of using the cooler northern, northeastern, and eastern slopes where possible, of providing windbrakes in areas exposed to hot summer winds. He said that these could be provided by planting four rows of castor beans, sunflowers, or some similar plants on the windward side of the field, but advised against using field corn for this purpose. He advocated deep setting, to give a long tap root, and said that direct planting in the field instead of transplanting would give the same result. He advised, however, that this be tried at first on a small scale, as it is exposed to a number of dangers. He pointed out that it was essential that there be an adequate supply of humus and that the land should not be sour if the plant food in it was to be available for the plants, and emphasized the necessity for shallow cultivation so as not to disturb the roots.

Mr. J. A. Rennie of A. M. Pullen & Co., certified accountants and tax counselors, then made an excellent talk on the social security laws and the taxation arising thereunder.

The last speaker was Mr. Gordon Corbaley of the American Institute of Food Distribution of New York City. After outlining the present situation of the market, which he stated was statistically very strong, Mr. Corbaley outlined the factors which would affect the present strikes and the efforts of the administration to improve the position of the farmer would result in materially higher prices for labor and raw material and that packers who sold too freely at low prices might find difficulty in filling their contracts except at a loss. Mr. Corbaley stated that consumption should be high and that with the return of prosperity consumers would demand better quality. He pointed out that if canners overpacked their market, the result would be low prices and losses. He then went on to explain the Robinson-Patman Act.

The meeting then adjourned for lunch, which was tendered the canners and their guests by the American Can Co., the Continental Can Co., and the National Can Co.

THE ELECTION—After lunch a business session was held, at which it was decided to hold a meeting for canners only to discuss the various problems with which they are faced. This meeting will be held in the Court House at Warsaw, Virginia, on Wednesday, March 31st, at 2 p. m. The following officers were re-elected for the ensuing year, President, Henry P. Taylor of Walkerton; Vice-President, Raymond Maynie of Reedville; Secretary, R. A. Harris, Jr., of Kinsale.



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The Canned Foods Authority

BALTIMORE, 20 S. GAY STREET MARYLAND

WANTED and FOR SALE

This is a page that must be read each week to be appreciated. You are unlikely to be interested every week in what is offered here, but it is possible you will be a dozen times in the year. If you fail to see and accept, your opportunity and money are lost. Rates upon application.

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FOR SALE — Copper and Aluminum Cooking Kettles; Retorts; Labelers; Fillers; Filters and Filter Presses; Tanks; Pumps; Mixers; Hydraulic Presses, etc. Send for complete bulletin. What have you for sale? We buy for cash. Consolidated Products Co., Inc., 18-20 Park Row, New York, N. Y.

FOR SALE—Retorts; modern, round, inside measurements 66 inches deep, 32 inches in diameter. Perfect condition. $50.00 each f. o. b. Monmouth, Maine. Ideal stencil cutting machine for cardboard, good size letters and figures. Price $50.00, like new. Heart of Maine Packing Co., 8 Prescott St., Lewiston, Maine.

MACHINERY FOR SALE — Discontinued plant. Tomato Finishers; Label and Picking Tables; Vegetable Peeling and Grinding Machine; Buffalo Food Choppers; Can Conveyors; Washers and Scalders; Cypress Cook Tanks; Tomato Peeling Tables; Chile Sauce Filler; Bottle Filling Machine; 2-inch Copper Coils; Nailing and Boxing Machines; Box Stitchers; Thermometers. C. M. London & Co., Greenwood, Del.

CANNERS—Let us help you with your machinery problems. We are canners as well as dealers in machinery. We pay cash for surplus equipment and can really save you money on your requirements. Try us. G. & J. Manufacturing Co., 3914 Willow St., Dallas, Texas.

FOR SALE—One No. 3 Townsend Bean Cutter with automatic feeding hopper. Address Box No. A-2194, c/o The Canning Trade.

FOR SALE—1 Tuc Husker; 1 No. 7 Sprague-Sells Corn Silker; 1 Sprague-Sells Duo Batch Mixer; 1 No. 5 Sprague-Sells Corn Cutter; 1 Morral Corn Cutter. Address Box A-2198, c/o The Canning Trade.

FOR SALE—12 No. 5 Sprague Corn Cutters; 3 Morral Corn Cutters; 6 Peerless Corn Huskers; 2 Ayars Cream Style Corn Shakers; 2 Cream Style Corn Fillers; 1 Steel Cooling Tank; 1 Sprague-Sells double batch Corn Mixer; 1 No. 8 Silker; driving head and tails for conveyors. Address Box A-2203, c/o The Canning Trade.

FOR SALE—1 Townsend bean cutter (2 sets of knives), $65.00; 1 Chisholm-Ryder bean snipper with oscillating knives and picking table, $450.00, in first-class condition. Address Box A 2208 c/o The Canning Trade.

FOR SALE—Blanchers, both 14 and 18 feet. In good condition. Address Box A-2200, c/o The Canning Trade.

FOR SALE—Full line Pea and Corn Machinery, boilers, engines, shafting, hangers and pulleys. Address Delphi Engineering Co., Delphi, Indiana.

FOR SALE—Following A. S. M. E. Code boilers; 2 - 150 H. P. Heine boilers 150 lb. W. P., 1 - 150 H. P. HRT boiler 150 lb. W. P., 1 - 170 H. P. HRT boiler 150 lb. W. P., 2 - 75 H. P. HRT boilers 128 lb. W. P., vertical boilers 1 each, 45 H. P., 3 H. P., and 5 H. P., pumps, feed water heater, etc. Address Boiler Engineering & Supply Co., Phoenixville, Pa.

FOR SALE—1 Hydro Geared No. 4 Sieve Sinclair-Scott Pea Grader; 1 Monel-Lined Monitor Type Blancher. These machines only used seven days. Good as new. Address Box A-2199, c/o The Canning Trade.

FOR SALE—2 American Utensil Juice Extractors; 1 American Utensil Pre-Heater. These machines are practically new and in A-1 condition. Also 1 No. 10 Ayars Plunger Filler; 1 Sturtevant Blower No. 70. Both in good working order. We offer the above at reasonable prices. Address Edgar F. Hurff Company, Swedesboro, New Jersey.

FOR SALE—One Huntley steel frame Monitor lima bean and pea grader. One No. 4 Monitor cleaner for peas and lima beans. One Monitor pea and lima bean washer. Eastern Shore Canning Co., Machipongo, Va.

FOR SALE—Continuous cooker. A complete line apple machinery, 10 peelers, 10 slicers with tables and all conveyors, peeling table, cider press, grinder for apples, tanks of all sizes, engines, pumps, pea cleaners, tomato fillers, crane, conveyor systems of all styles, scalders, shafting, hangers and pulleys, bean cutter and grader, pea filler, exhaust box, labeling machine, open kettles and factory trucks. Address Box A-2204, c/o The Canning Trade.

FOR SALE—Large number of used transplanters as good as new at attractive prices. Lease Brothers, Greenville, Ohio.

FOR SALE—Following used machinery in very good condition; 2 pea cleaners, No. 2 and No. 4, 1 20-ft. picking table, 1 Monitor sample pea grader, 2 12-ft. pea elevators, 1 Monitor whirlpool washer, 1 centrifugal pump 2 in., 1 Chisholm-Ryder pregrader No. 6, 1 pair corn batch mixers, 1 Tuc whole grain corn cutter, 1 Fairbanks water pump, 1 steel 17-ft. tomato elevator. Address D. E. Winebrenner Co., Hanover, Pennsylvania.

WANTED — MACHINERY

WANTED—Good used round two-crate steam retort, complete and in first-class condition, also process crates. L. H. Shields, English, Indiana.

WANTED—A Wonder or an Anderson Barngrover Cooker for No. 2½ cans and one for No. 10 cans. Also an Exhaust Box for No. 10 cans. Advise all particulars as to condition and price. Address Box No. A-2197, c/o The Canning Trade.

WANTED—Canners attention: Send us a list of any canning equipment that you may have to sell for spot cash or to exchange for new machinery. Write for our catalog covering a complete line of up-to-date canning machinery. A. K. Robins & Co., Inc., Lombard and Concord St., Baltimore, Md.

FOR SALE — SEED

FOR SALE—Seed, in carlots:

Peas—Surprise and Wilt Resistant Perfection, f. o. b. growing point, Idaho, at 5½c per pound.

Peas, Alaska, f. o. b. growing point, Idaho, at 5c per pound.

Corn—Golden Cross Bantam	at 25c	per pound
Stowell's Evergreen	at 12c	per pound
Early Evergreen	at 12c	per pound
Country Gentlemen	at 15c	per pound
Golden Bantam	at 10c	per pound
Spancross	at 20c	per pound
Marcross	at 20c	per pound
Whipcross	at 20c	per pound

all Sweet Corn f. o. b. Orange, Connecticut, Connecticut grown Seed. Address S. D. Woodruff & Sons, Orange, Conn.

FOR SALE—Good Marshall Canning Company strain of Evergreen sweet corn. High germination and clean. If interested write Marshall Canning Company, Marshalltown, Iowa.

FOR SALE — FACTORIES

FOR SALE—Two line western plant in good condition and equipped for canning peas, beans, cherries and kraut also for growing own seed peas. Located in irrigated section with ample acreage available. Address Box A-2184, c/o The Canning Trade.

FOR SALE — MISCELLANEOUS

FOR SALE: TOMATO PULP—A few cars of strictly whole tomato pulp in five gallon cans. Good color and extra nice. Address W. L. Jones Food Company, Pemberville, Ohio.

FOR SALE—Strictly fancy whole tomato pulp in No. 10s; 1.04 and 1.045 s. g. Good color, fine flavor. Sample on request. Advise quantity needed. Address Glick's Farms, Smoketon, Pa.

HELP WANTED

WANTED—Factory Superintendent capable of packing a fancy pack of vegetables, especially beets. Kindly give full particulars in first letter. Address Box B-2187 c/o The Canning Trade.

WANTED—Factory Superintendent for Maryland Crushed Corn Factory. Give references. Address Box A-2196, c/o The Canning Trade.

WANTED—Food chemist experienced in factory production especially on tomato products and pickle specialties. Please give full details, including salary requirement. Good opportunity. Address Box B-2205, c/o The Canning Trade.

WANTED—Assistant superintendent for large canning plant. One who understands preserves, jellies, apple butter, etc., preferred. Permanent position and good salary for a capable man. Address Box B-2207, c/o The Canning Trade.

SITUATIONS WANTED

POSITION WANTED—As Production Manager. 20 years successful experience in the canning of high grade fish, preserves, cranberry sauce, etc. Especially experienced in the development of new products. Would also consider sales for New England territory. References. Address Box B-2192 c/o The Canning Trade.

POSITION WANTED—By Canning Factory Superintendent with company packing one or more of the following canned foods: whole tomatoes, tomato products, green beans, pumpkin, kraut, hominy, pork and beans. Can lay out plant and install equipment for products mentioned. References. Address Box B-2191 c/o The Canning Trade.

WANTED—Position as superintendent or plant manager. Twenty years' experience packing quality peas, corn, beans, spinach. Understand the business from field to finished product. Best of references. Address Box No. 2195, c/o The Canning Trade.

POSITION WANTED—By salesman with 20 years experience merchandising food products and kindred lines, and familiar with trade in Baltimore, Washington, Philadelphia and New York State. Desires connection with a reputable food manufacturer, packer, importer or distributor. If interested can furnish ample references. Address Box B-2190 c/o The Canning Trade.

POSITION WANTED—By Salesman and Representative with 13 years' experience merchandising canned foods, cold pack, and allied lines, familiar with trade, Maryland, District of Columbia, Pennsylvania, Virginia, North and South Carolina and West Virginia. Desires connection in the capacity of brokers and sales representative with food manufacturer, packer, importer or refiner. Can furnish reference of high order. Address Box B-2201, c/o The Canning Trade, Baltimore, Md.

POSITION WANTED—As canned fruit and vegetable grader. Experienced canned fruit and vegetable packer, conversant with all of the U. S. Standards for Grades now in effect and familiar with Food and Drug regulations relative to same. Qualified in Howard method of mold counting. Also grade raw products, fruits and vegetables, in accordance with Federal standards. Address Box B-2177 c/o The Canning Trade.

POSITION WANTED—As Superintendent of Production. Know the canning business from the field to finished product and pack a high grade of fruits and vegetables. References. Vernon Reed, 2910 Swiss Ave., Dallas, Texas.

POSITION WANTED—By a Pickle Man with lifelong experience in the pickle and table condiment line. Can turn out strictly high grade or standard merchandise. Have been connected with some of the best houses in this country as superintendent and packer. Suitable references. Address Box B-2206, c/o The Canning Trade.

New Ideas FOR AN OLD INDUSTRY..

THIS company is now in the business of supplying cans to packers. It enters the field at a time when the industry is beset with problems of readjustment.

In this situation there are several facts of special interest to you:

1 Crown Can is independent of other manufacturers in this field. It is unhampered by traditions. It has no long established habits of thought or practice.

2 Crown Can has behind it the resources and laboratory facilities of one of the largest business institutions in the country. Its recently built modern plant provides unexcelled production and shipping facilities.

3 Crown Can brings to the canning industry many progressive ideas and a new philosophy of business relations.

A Crown Can Representative will gladly explain the many advantages this service makes available to you.

Crown Cans

CROWN CAN CO. • PHILADELPHIA, PA.

DIVISION OF CROWN CORK AND SEAL COMPANY

THE MARKETS

IN LEADING CANNED FOODS CENTERS

WEEKLY REVIEW

Spot Canned Foods Market Boiling—Food Index Price at High Point—The Drive to Buy No. 10s—All Spot Prices Strong—The First Crop Prediction—Just a Club for Buyers—The President's Future Prices—Sauerkraut in its Strongest Position.

THE MARKET—Business in canned foods is "great"; there is almost a scramble for some items, and more and more items are being added to this scramble-list daily. Most canners, of course, are mere spectators on the side lines, because they have long since been sold out. However, there are a few holders, who, because they have not been tendered orders, may feel that the market is quiet. If they have had the courage to hold to this date, our advice to them is not to weaken. Spot canned foods prices during the next two months ought to prove thrilling. Record highs in canned foods, in the past, were usually reached in May and June. Will history repeat?

It is interesting to note that Dun & Bradstreet's weekly food price Index, for March 16th, reached 3.01, the highest since February 13th, 1930, when it was 3.07, this shows an advance during the past year of 16.2. When compared with the same week in 1933, the record low, it shows an advance of 95.5 per cent. If canned foods prices have not kept full pace with this showing, it is your own fault, because the increase in the consumption of your products during this same time has been even heavier. You hold the answer in your own hands.

If there are any No. 10s, in spot tomatoes, stringless beans, peas, corn or beets left, or at least not "optioned" to some of the rush of buyers of the past two weeks, they must be well buried. The Government has been a leader in this onslaught, and it is not done as yet. But there are others, many institutions, etc., who have come to realize that they may not be able to pick up supplies just as they need them. And what is taking place in 10s, is well duplicated among buyers of all other sizes of cans, in all other products. Somebody is going to get left without goods, before new ones can be produced.

Canned foods prices are stronger than the figures on the market pages show; being largely a seller's market the prices at which goods are exchanged are not blazoned to the world, and many of them are above the rates now quoted. If you have the goods you can get your own price, within reason.

FUTURES — Chief interest is centered about futures, and there have been more offering them and more buying of them this week. Small chance that the buyers will ever regret the buying, but not so with the canners. They are taking a grave risk at almost any price on futures. Even the growers are now showing a tendency to join the strikers, and we have a good many months to go before picking time arrives—if they will pick and not strike.

The first official "prognostication" (forecast of intended acreage) has come out, and of course on peas. Firms which handled 65 per cent of the pea crop last year report a 2 per cent increase over 1936 acreage, as their present intentions. But, of course, this can be all upset, both by those who did not report—the other 35 per cent—or by crop yields of extraordinary size, or crop failures of equally extraordinary severity. The reporting agency, the Bureau of Agriculture Economics, reminds us that the usual loss of acreage equals 9 per cent; so what have we? Nothing but a club in the hands of the buyers, and their agents, to beat down canners in their prices on future peas. And strange to relate, it would seem that the less real substance there is in such a club, the greater the damage the buyers can do. There can be no substance in a report of this kind at this time, and the Bureau does not offer it as such. It is too early. Wait until we can see better what may be expected from this up-side-down weather year; and whether or not the stubborn resistence of growers to grow peas at suitable prices to canners, will hold or break. The one thing you pea canners have, and which is definite, is that you will go into the 1937 pea canning season with bare floors, and a steady, increasingly hungry demand. And you cannot over-pack that demand in one year, if you pack an acceptable quality. There you have something basic; so stick to that and disregard the "dope" for the present.

California has stirred the market by issuing new spinach prices, on a pack it knows cannot be up to normal this year. So prices are fair, and may be taken as a guide by others. Buyers are still complaining that there are no future prices on asparagus, and on some other wanted items like Maine corn. They could say also that there are any number of well known canners who are out of the market on futures. Those canners will take care of their regular customers just as soon

as they can see more clearly what may be expected in the way of costs; and their old buyers know this. That is the sound business of this industry, and as it should be.

President of the N. C. A. Mr. Ralph Dulany (John H. Dulany & Son, Fruitland, Md.), apparently to keep peace in the family of canners and buyers, has issued some future prices, and here they are, as quoted the *New York Journal of Commerce*:

STRINGLESS BEANS

	No. 2 Green	No. 10 Green	No. 2 Wax	No. 10 Wax
Fancy tiny whole	$1.15	$5.75	$1.20	$6.00
Fancy small whole	.95	4.75	1.00	5.00
Fancy cut	.90	4.50	.95	4.75
Standard cut	.72½	3.25	.77½	3.50

LIMA BEANS

	No. 1s	No. 2s	No. 10s
Midget green	$1.05	$1.52½	$1.50
Tiny green	.97½	1.42½	7.00
Small green	.82½	1.22½	6.00
Medium green	.....	1.17½	5.75
Sel. G. and W.	.65	.95	4.75
Fresh white	.55	.75	3.75

SWEET POTATOES

	No. 2	*No. 3	No. 2½	No. 10
Fancy syrupack	$0.92½	.....	$1.20	$3.85
Extra standard syrupack	.80	.92½	1.02½	3.35
Solid pack	.70	.....	.90	3.00
Vacuum pack	.....	.90	.....	.....

ALASKA PEAS

	No. 2s	No. 10s
Extra standard 1s and 2s, mixed	$1.25	$6.25
Extra standard 3s and 4s	.95	4.75
Standard 3s and 4s, 65 pts	.87½	4.25
Standard 3s and 4s, 60 pts	.82½	4.00

All prices f. o. b. factory.

Sauerkraut is today in the strongest statistical position—on spots—it has been in 15 years, if ever before, says that Association.

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NEW YORK MARKET

By "New York Stater"

Special Correspondent of "The Canning Trade"

Prices Firmer on Both Spots and Futures—Buyers More Interested—Covering on Future Peas—No. 10 Corn Being Bought—Salmon Higher—Good Export—Tentative Prices on Spinach—Big Dinner of Wholesalers and Brokers—Fruits Moving Well.

New York, March 19, 1937.

THE SITUATION—The market has shown further firmness during the past week, with strength encompassing both spots and futures, and there has been a slight pick-up in demand as distributors have come into the market for the purpose of rounding out their supplies. Tomatoes and salmon in particular have attracted interest during the week, while more inquiry for futures has also been in evdence in some divisions of the market.

THE OUTLOOK—A quick clean-up of carryover holdings of most lines of vegetables and fish is indicated over the coming three months. Canned fruit volume is also expected to expand, with canners probably destined to be down to bare floors on most items before the start of 1937 packing operations. With packers showing firmer price views on futures, jobbers are reconsidering their policies with respect to forward operations, and it is quite likely that a secondary buying wave will be witnessed during the coming 30 days.

TOMATOES—Southern packers are showing a tendency to work the market into firmer ground and this advance, long overdue, should continue. Currently, canners are quoting for prompt shipment on the basis of 44 to 45 cents for 1s, 70 cents for 2s, $1.10 for 3s, and $3.25 to $3.35 for 10s, all f. o. b. country canneries. Buyers are taking hold of the spot market with more confidence but are not as yet inclined to operate on futures to any great extent.

PEAS—Federal statistics indicating a 2 per cent increase over 1936 plantings of peas have not tended to effect the market for future peas to any material extent. Distributors have covered in a moderately large way on the more wanted grades and sizes. Southern futures are coming in for more attention, with standards quoted at 82½c to 87½c on Alaskas, while extra standards are posted at 95c for 3 and 4 sieve and $1.25 for 1 and 2 sieve. There has been no appreciable change in the spot pea situation during the week, although the undertone on fancies has rallied slightly.

CORN—The market has been rather quiet throughout the week on both spots and futures, with prices holding unchanged at former levels. No. 10s are slightly more in demand, with distributors stocking up on attractive offerings in anticipation of increased government buying.

SALMON HIGHER—The market is working into firmer ground, with leading sellers advancing chums to $1.00 minimum, f. o. b. coast, and reds generally held on the basis of $2.25, although an occasional offering at the old price of $2.15 is heard of. Pinks are firm at $1.10, with cohoes commanding $1.75 and medium reds unchanged at $1.70. The statistical position of the market shows further strength, with stocks of all grades considerably under holdings a year ago. According to the Association of Pacific Fisheries, holdings of principal grades unsold in first hands as of March 1 compared with last year as follows:

	Cases	
	Mar. 1, 1937	Mar. 1, 1936
Pinks	853,000	1,451,000
Chums	110,000	268,000
Reds	197,000	307,000
Cohoes	34,000	76,000
P. S. Sockeyes	17,000	88,000

EXPORT OUTLOOK—Coast advices indicated continued demand for salmon and canned fruits for export, particularly to England. Considerable interest was shown in the trade hereby reports from London indicating that the British Government had concluded arrangements for the building up of a huge reserve supply of food products to provide for any contingency that may develop in the unsettled European position. Part of this reserve, reports indicate, will consist of some 33,000,000 cases of canned foods. While undoubtedly the English government will limit its purchases to Canada, Australia, and other possessions of the Empire as much as possible, consummation of the reported plan should result in the placing of consider-

able canned foods business in the United States, as the dominions are not in position, at present, to take care of the outlined requirements.

SPINACH—Tentative opening prices of $1.20 on fancy 2½s spring pack California spinach and $3.75 for 10s have been put out in the trade here. Buyers generally are deferring the placing of business until the receipt of prices from additional canners.

N. Y. JOBBERS DINE—Some 1,000 members of the New York food trade, including many brokers, will turn out for the 36th annual dinner-dance of the Greater New York Wholesale Grocers' Association at the Waldorf-Astoria Hotel here tomorrow evening. An elaborate entertainment program, featuring a floor show, two dance orchestras, and a "surprise feature," has been arranged by Irving Dickman, well known Brooklyn wholesaler, who is chairman of the arrangements committee.

PEARS EASIER—Offerings of California Bartlett pears at concessions from quoted lists are reported here this week. Standards are reportedly available for prompt shipment at $1.45 for 2½s, as against packers' quoted prices of $1.50 to $1.55, while choice are offered at $1.55, against a posted range of $1.65 to $1.80. It is expected that the market for this fruit will do better within the next few months, as the national sales campaign to be staged by members of the National Association of Food Chains during April should help considerably in cutting down the present bothersome surplus on the coast.

PEACHES FIRMER—In direct contrast to the softness on pears, the market for California peaches is showing renewed firmness, and a general "upping" of present prices would not come as a surprise. Buyers have been showing some interest this week in peaches for prompt and nearby shipment on the basis of $1.45 for standard 2½s, $1.55 for choice, with 10s growing rather scarce at $5.25 to $5.50 for choice, $4.75 for standards, and $4.25 for waters.

STRINGLESS BEANS—Offerings of southern pack stringless beans on future contracts are receiving some attention here, the market being quoted at 72½c for standard 2s and $3.25 for 10s, on greens, with wax posted at 77½c and $3.50 respectively. Fancy cut green at 90c for 2s and $4.50 for 10s, with wax at 95c and $4.75, respectively, are also attracting attention. For prompt shipment, the market holds unchanged on the basis of 85c for 2s and $4.25 for 10s, f. o. b. canneries.

CHICAGO MARKET

By "Illinois"

Special Correspondent of "The Canning Trade"

Heavy Buying of War Material Topic of Discussion—Weather Seasonable—Spot Market Generally Firm, Prices Steady—Heavy Pack of Florida Fruit Juices Anticipated— The Old Timer.

Chicago, Ill., March 19, 1937.

GENERAL CONDITIONS—Just how much of the general improvement in business and industry as a whole is due to the huge expenditures for war material going on throughout the world is a topic of some discussion around the market. One of the economic authorities stated: "World armament expenditures have risen to a level more than double 1928 or 1929." It makes one stop, look and listen.

THE WEATHER—Chicago has been threatened during the past week with its usual and annual March blizzard, but fortunately our fair city escaped it and with the exception of a few light snow flurries and the temperature ranging around twenty to thirty above, the month has been running more or less according to Hoyle.

TOMATOES—Up again a little, down again a little, then up again, etc. That seems to be the way the spot market is functioning these days. No. 2 tin standards in Indiana and Ohio are now 75 cents factory and firm. One cannot buy No. 2½ standards at less than $1.00. No. 10's are scarce and firmly held at $3.40 to $3.50, factory.

There is but little change in the future situation. The little fellows that started selling future No. 2 standards at 70 cents, factory, have apparently controlled the market as the old and more substantial canners are refraining from meeting that competition and are holding to the basis of No. 2 tin standard tomatoes at 75 cents, factory; No. 2½ tin standard tomatoes at $1.00, factory.

PEAS—The spot market is a little wobbly. Some additional price concessions have been made during the week. Holders of spot peas seem to be divided into two groups, one standing firm and steadfast, unwilling to concede anything and the other group, willing to trade with the desire of cleaning up before planting season rolls around.

All the latest data

FORMULAE — COOKING TIMES
COOKING TEMPERATURES

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PEAS, BEANS, CORN, TOMATO
Other seeds for the Canner

LEONARD SEED COMPANY
CHICAGO

The volume of future pea business going on is reported as limited. The local trade are awaiting some definite line upon what Wisconsin pea canners plan to do as regards acreage.

CORN—The market continues unchanged but firmness rules all along the spot front with 95 cents to $1.00 the minimum on No. 2 standard Evergreen.

Considerable future corn business has been recorded and somewhat like tomatoes, a few canners have named prices that have appealed to the trade as particularly attractive such as No. 2 standard Evergreen at 75 cents, factory; No. 2 extra standard Golden Bantam at 85 cents, factory, but in justice to the general corn industry of the Middlewest, it can be stated that few are the canners willing to sell at these levels.

BEETS—Spot stocks are cleaning up nicely and it is becoming difficult to secure even some of the popular sizes like No. 2 tin sliced, diced, etc. Whole grades are particularly scarce.

Future beets have been selling well and considerable volume has been recorded. Prevailing prices on the 1937 pack are:

	No. 2 tin	No. 2½ tin	No. 10 tin
Fancy Cuts	$ .65	$ .75	$2.75
Sliced	.70	.80	3.00
Diced	.72½	.80	3.00

GREEN AND WAX BEANS—There is a clean up of wax throughout this district. Some standard greens are available at a price range of 90 cents to 95 cents, factory Wisconsin and Michigan.

	Green	Wax
No. 2 Extra Fancy.....	$1.10	$1.10
No. 2 Fancy.....	1.05	1.05
No. 2 Extra Standard.....	.90	.90
No. 2 Standard.....	.80	.80

GRAPEFRUIT—A report from Florida has it that there will have been packed this season in that State approximately four million cases of grapefruit and about three million cases of grapefruit juice, which total will approximate about twice that produced a year ago. In the face of such information, one wonders why the extreme strength that has recently developed. Of course the price, due to Government buying, has advanced sharply for the fresh fruit with the result that most canners have completely withdrawn from the market and quite a number of them are more concerned about filling orders booked at lower prices that ruled a month ago than taking on new business even at higher levels.

PEARS—A story is going the rounds that the large surplus of unsold spot pears in Pacific Coast canners hands is pure propaganda, developed by certain large interests whose object was twofold. First, another "playing card" for the chains, and secondly, to get the growers on the Coast in a frame of mind where they could demand and obtain more for their fruit the coming season.

Certain authorities maintain that with the exception of the two largest canners in California, there isn't any surplus of spot pears and that the rank and file and big majority of all pear canners in Oregon, Washington and California are holding less pears today than a year ago. The propaganda has weakened the market somewhat, but the fact is rapidly gaining ground that the general situation is much firmer than the propagandists have been painting it and that their publicity might prove reactionary.

CALIFORNIA PEACHES, APRICOTS, ETC.—The market has been supported by a steady Spring demand. Many items are completely sold out. The increased labor schedules for all California canners effective March 1st means higher prices for the 1937 production which places a back log of firmness to the general Coast picture.

THE OLD TIMER—(Continued from last week)—The Old Boy reached for a needed refreshment after having read thus far and turning around, said:

"What do you think of it anyway, Illinois? This fellow Paul Myer certainly brought out the true facts and presented same in a way that was enlightening. Since reading his address that was published in the Souvenir Program, understand the Brokers Association have issued a regular booklet and if you haven't it, be sure and drop into my office and tell the boys to give you the one they have there. Incidentally, you ought to recommend to all your readers to get it and cover it, every word." (To be continued.)

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GULF STATES MARKET

By "Bayou"

Special Correspondent of "The Canning Trade"

Oysters Fat and Pack Progressing—Shrimp Prices Way-up—Cold Weather Holding Back Bean Planting—Some Few Peas Are Canned Hereabouts—Turnip Greens Lightly Packed—The Pure Food Law.

Mobile, Ala., March 18, 1937.

OYSTERS—The canning of oysters is moving along at a fair clip in Mississippi and Louisiana, but not so fast in Alabama, due to the scarcity of oysters on the Alabama reefs.

However, oysters are fat now, which boosts the output of the factories considerably to what it was when oysters were poorer. The size of the oyster shell during the canning season remains the same size, whether the oyster is poor or fat, but when the oyster is fat the weight of cooked meat obtained is from three to four times more than from poor oysters, because the bladder part of a poor oyster, which contains water turns into meat and does not lose as much weight when it is cooked.

The price of canned oysters is $1.10 per dozen for five-ounce and $2.20 for ten-ounce, f. o. b. factory.

SHRIMP—Very little attention is given by the seafood canners to the shrimp pack at this time, because they are busy with oysters and the few shrimp that are being produced go to the raw, headless shrimp dealers anyway.

The price of canned shrimp has about reached the point to where "the sky is the limit," and the firm that has canned shrimp to sell can get as easily $1.75 per dozen for medium and large shrimp as $1.60 per dozen, f. o. b. cannery.

SNAP BEANS—The weather continues cold and no planting of beans for the canneries has been started and the few that have been planted are for the produce market and the plants are not doing so well.

Some of the canners have hopes of being able to start canning beans the first of May.

No prices on future beans are out and will not be for several weeks, but 80c per dozen for No. 2, f. o. b. cannery for May delivery will most likely prevail.

PEAS—The canning of peas has always been carried on in a limited way in this section, but it has never assumed large proportions, no doubt due to other sections, such as Wisconsin being able to grow them cheaper.

However, the canners of this section that have canned them always have been able to dispose of their pack at a fair price.

The canning of peas is expected to start about the middle of April and the tentative price is 80c per dozen for No. 2 standards, f. o. b. factory.

TURNIP GREENS—This is a pack that has never assumed great proportions in this section, yet it should be equally as important a pack as snap beans, because the land here is adapted to it and the article produced is as good as the best, yet beans have always had the preference from the canners here and the turnip green pack is more or less of a side line with them.

The price of turnip greens is 80c per dozen for No. 2, f. o. b. factory.

THE NEW PURE FOOD BILL—Does the new pure food bill take the gamble out of canned foods?

Not until the housewife can have the pure food law guarantee her that the contents of the can are the same as that shown or printed on the label, will the sale of canned foods reach its peak.

The pure food administration has to make it easy for the housewife to buy from the label and assure her that what is on the label is also in the can. In the case of shrimp, the trade has four grades, namely: Small, Medium, Large and Jumbo. This calls for a division of four sizes of shrimp, and the price charged the housewife is according to the size or grade. The smallest size shrimp is the cheapest and the Jumbo is the highest. Now, if the pure food law would establish a standard of grades and say Jumbo shrimp are to grade from 10 to 20 to the can; Large shrimp 20 to 30 to the can; Medium shrimp 30 to 50 to the can and Small 50 to 70 to the can, then the housewife would have the protection that in taking a can of shrimp marked "Medium" she would not get one containing 60 shrimp and then buy one marked "Large" and it contained 40 shrimp.

I use shrimp as an illustration, not that it is any worse graded than any other canned food commodity, but simply because I am more familiar with the complaints of the housewife on this commodity and I have given it more consideration.

A pretty label on the can may sell the article to the housewife, but unless it is backed up by quality and grade of the contents in the can, it will hamper the future sales of that commodity and eventually kill it if the practice of misbranding is not corrected.

Another thing, the name of the canner should appear on the can because this firm is directly responsible to the law and to the consumer for what they put in the can. Moreover, it gives greater confidence to the consumer, in as much as it shows him or her that the canner is proud of his product and not ashamed of it. The old pure food law of allowing only the canners to use the phrase "Packed by," should be amended to read that the name of no other firm, except the firm that did the actual canning should appear on the label of the can. This would do away with some unscrupulous canner working off inferior products on distributors or jobbers when they use the label of the distributor or jobber.

CALIFORNIA MARKET

By "Berkeley"

Special Correspondent of "The Canning Trade"

Nearly All Items in Very Short Supply—Peaches Very Strong—Chains to Clear Pears—Good Future Business in Peas and Beans—Marketing Agreement on Asparagus—Heavy Inquiry for Spinach—Recent Rains May Have Hurt Apricots—New Tuna Prices—Larger Firms Out of the Salmon Market.

San Francisco, March 18, 1937.

HOLDINGS LIGHT—The rush of business that followed the settlement of the maritime strike and the resumption of shipping by water routes has subsided somewhat and canners are taking stock of what is left. In some lines, holdings are very limited, with no one in a position to handle any sizeable orders. In others, unsold stocks are confined to a few canners and prices are firmly maintained. Only on a few items is there any weakness and this is not especially pronounced.

FRUITS—The feature of the market on fruits is the exceptionally strong position of peaches, apricots, cherries and Hawaiian pineapple. On some of these, quotations are limited to a few grades and sizes. Pears continue to be a weak item, both in the local market and in the Pacific Northwest. Chain store interests have arranged to launch a special sales campaign on this fruit in an effort to get rid of the surplus before the new packing season commences. Spot prices look

SCOTT VINER
CANNING MACHINERY
SCOTT IMPROVED VINERS—VINER FEEDERS
founders of
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THE SCOTT VINER CO. COLUMBUS, O

AGICIDE
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AGICIDE LABORATORIES
108 N. Water Street MILWAUKEE, WIS.

very reasonable in view of the marked increases in packing costs that are in sight for the new season.

FUTURES—An active interest is being taken in futures, with substantial bookings on new pack beans and peas. From the manner in which business has been coming in the trade seems desirous of getting a good share of its requirements arranged for in advance. Just a week ago the California Packing Corporation brought out opening prices on its Mid-West pack of corn and reports that about fifty per cent of its expected output has already been sold, with some large markets to be heard from.

ASPARAGUS—Work is under way on securing signatures to a marketing agreement on asparagus. To become effective this must be signed by growers representing 75 per cent of the acreage, as well as by canners. The agrement calls for regulation of the pack through the size of asparagus to be handled and through limiting the packing season to eighty days. Packing is expected to be under way within two weeks, as warm rains are bringing on rapid growth of grass. Some business is being booked, it is understood, on the basis of last year's opening list. In general, the trade seems to feel that slightly higher prices will be necessary.

SPINACH—Distributing markets must be closely cleaned up on spinach, judging by the numerous inquiries for goods for immediate shipment. Nothing seems available for less than $1.25 for No. 2½s. Warm weather and light rains are bringing the crop on in good shape and packing will probably start in favored districts about March 22. The outlook suggests a pack of about 2,000,000 cases. Opening prices will probably be announced before the end of the month.

APRICOTS—The warm rains being experienced are favorable for most crops, but apricots are an outstanding exception. This fruit is more easily damaged by rain than almost any other in the deciduous line. Rain coming during the blossoming period and while the fruit is setting causes brown rot and green rot and can easily ruin a crop. Trees have blossomed heavily this season, but the rains of the past few days have caused considerable damage and a continuance might easily mean a short crop.

TUNA—Opening prices on 1937 canned tuna have been brought out by the California Packing Corporation. Provision is made for shipment to February 15, 1938. The prices quoted here are f. o. b. cannery at San Diego or dock at San Pedro, with the usual difference for Pacific Coast common point or dock. Prices on Del Monte Brand are $4.10 for ¼s, $6.20 for ½s and $11.50 for 1s. Standard yellowfin or bluefin, in other brands, ¼s, $3.90; ½s, $5.75, and 1s, $10.50. Standard lightmeat, ¼s, $3.75; ½s, $5.50, and 1s, $10.00. Light meat flakes, ½s, $5.00, and 1s, $9.00.

SALMON—A lot of inquiries are coming in for salmon but business is confined to the limited offerings of independents. Most of the large concerns are still out of the market. Pinks are firm at $1.05, with no reds selling for less than $2.25. All grades are in much lighter supply than a year ago, despite the record pack.

CANNERS LEAGUE—At the annual meeting of the Canners League of California held at Del Monte early in the month, directors were chosen, as follows: Burl Brant, Sutter Packing Co.; R. S. Castle, United Packing Corp.; A. W. Eames, California Packing Corp.; D. C. Kok, United States Products Corp.; G. N. Pfarr, Tri-Valley Packing Association; E. Powers, Manteca Canning Co., and F. S. Wyatt, Elmhurst Packers, Inc. The seven members of the Board of Directors whose terms of office carry over are: E. E. Chase, Richmond-Chase Co.; W. A. Gellersen, Libby, McNeill & Libby; C. N. Lovegran, Hunt Brothers Packing Co.; W. W. Murray, Hearst Sunical and Packing Corp.; M. E. Wangheim, California Conserving Co., and F. A. Wilder, Pratt-Low Presenting Co.

A meeting of the Board of Directors has since been held and officers chosen, as follows: President, E. E. Chase, Richmond-Chase Co., San Jose; vice-president, G. H. Bradt, Hunt Brothers Packing Co., San Francisco; vice-president, A. W. Eames, California Packing Corp., San Francisco; vice-president and secretary, Preston McKinney, San Francisco; treasurer, G. S. Lackie, G. W. Hume Co., San Francisco; assistant secretary, W. S. Everts, and assistant secretary, Sylvia Kempton.

The executive committee is made up of F. A. Wilder, chairman, B. H. Body, G. H. Bradt, W. A. Gellersen, H. E. Gray, C. E. Hume, A. R. Plummer, R. L. Pratt, T. H. Richards and F. E. Booth, honorary member.

The operating committee, as appointed, consists of F. A. Bishop, E. E. Chase, Jr., A. W. Eames, W. St. B. Eustis, W. A. Gellersen, H. E. Gray, C. E. Hume, D. C. Kok and F. L. Monnet.

The traffic committee consists of Ralph Burrell, W. F. Caldeira, L. F. Lyons, E. A. Pyrro, J. L. Roney and W. D. Wall.

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IS FERTILIZER EXPENSIVE?

(Continued from page 14)

of the increased yields of several times the cost of fertilizer used. From the standpoint of financial return, fertilizer is not expensive.

Cost of fertilizer is not a big item of expense to the farmer when compared with his income or with other expenditures. In 1934 fertilizer costs represented only 2.06 per cent of gross farm income and 4.93 per cent of income realized from crops alone. Expenditures for fertilizer were well less than half of the expenditures for wages of hired help, or interest, or taxes, or feed, or the cost of operating automobiles, trucks, and tractors, or expenditures for farm implements.

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TOO LATE TO CLASSIFY

WANTED—Five 42" x 60" vertical retorts, with covers, weights and gauges. One corn cooker filler for No. 300 can. One gang type filler suitable for gallon jugs. Must be in good condition and reasonably priced. Address Kirgan's Arcadia Farms, Inc., Curtice, Ohio.

CANNED FOOD PRICES

All Prices quoted F. O. B. Factory

Prices given represent the high and low canners' selling price of the current week, subject to customary cash discounts. Quotations per dozen unless otherwise noted. "Eastern" quotations for Atlantic Coast States east of Ohio River; "Central": Central States West of Ohio River to Mountain States; "West Coast": Mountain and Pacific Coast States.

Quotations on this page are for spot goods. For future quotations see market reports.

Canned Vegetables

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
ASPARAGUS						
White Colossal, No. 2½	.....	.....	.....	.....	2.75	2.85
Large, No. 2½	.....	.....	.....	.....	2.50	2.90
Medium, No. 2½	.....	.....	.....	.....	2.75	2.85
Green Mam., No. 2 ro. cans	.....	.....	.....	.....	2.40	2.50
Medium, No. 1 tall	.....	.....	.....	.....	1.85	1.85
Large, No. 2	.....	.....	.....	.....	2.35	2.45
Tips, White, Mam. No. 1 sq.	.....	.....	.....	.....	2.60	2.70
Small, No. 1 sq.	.....	.....	.....	.....	2.35	2.45
Green Mam., No. 1 sq.	.....	.....	.....	.....	2.40	2.50
Small, No. 1 sq.	.....	.....	.....	.....	2.10	2.20
BAKED BEANS						
16 oz.	.57½	.60	.62½	.65	.....	.....
No. 2½	1.05	1.35	1.10	1.20	.....	.....
No. 10	4.25	4.25	3.85	4.00	.....	.....
STRINGLESS BEANS						
Fancy Cut Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Cut Green, No. 2	.90	1.00	.....	.....	.....	.....
No. 10	4.75	5.00	.....	.....	.....	.....
Std. Cut Green, No. 2	.85	.90	.90	.95	.85	.90
No. 10	4.25	4.25	.....	.....	.....	4.25
Fancy Whole Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Whole Green, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Whole Green, No. 2	.....	1.25	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Fancy Cut Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Cut Wax, No. 2	.....	1.20	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Cut Wax, No. 2	.....	1.10	.....	.....	.85	.....
No. 10	.....	5.50	.....	.....	4.25	.....
Fancy Whole Wax, No. 2	.....	1.75	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. Whole Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. Whole Wax, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Red Kidney, Std. No. 2	.80	.85	.80	.85	.85	.....
No. 10	4.35	4.50	3.75	4.00	4.25	.....
LIMA BEANS						
No. 2 Tiny Green	1.60	1.62½	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Medium Green	1.35	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Green & White	.85	1.00	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
No. 2 Fresh White	.82½	.85	.....	.....	.....	.....
No. 10	3.25	.....	.....	.....	.....	.....
No. 2 Soaked	.67½	.70	.....	.75	.....	.....
BEETS						
Whole, No. 2	1.00	.....	.....	.....	1.40	.....
No. 2½	1.20	.....	.90	1.10	1.85	.....
Std. Cut, No. 2	.85	.85	.....	.....	.....	.....
No. 2½	1.00	1.15	.....	.....	.....	.....
No. 10	4.00	4.25	.....	.....	.....	.....
Ex. Std. Cut, No. 2	.....	.....	.72½	.77½	.....	.....
No. 2½	.....	.....	.....	.....	.....	.....
No. 10	4.25	4.25	.....	.....	.....	.....
Std. Sliced, No. 2	.95	.95	.....	.....	.85	.90
No. 2½	1.15	1.15	.....	.....	1.10	.....
No. 10	4.50	4.50	.....	.....	3.35	.....
Ex. Std. Sliced, No. 2	.....	.....	.82½	.85	.95	.....
No. 10	.....	.....	.....	.....	3.60	.....
CARROTS						
Std. Sliced, No. 2	.....	.....	.....	.....	.....	.....
No. 10	4.50	4.50	.....	.....	.....	.....
Std. Diced, No. 2	.75	.75	.....	.....	.....	.....
No. 10	3.75	3.75	.....	.....	.....	.....
PEAS AND CARROTS						
Std. No. 2	.70	.85	.....	.....	.....	.....
Fancy No. 2	1.10	1.15	.....	.....	.....	.....
CORN—Wholegrain						
Yellow, Fancy No. 2	1.20	1.40	1.25	1.35	.....	.....
No. 10	6.50	7.00	.....	.....	.....	.....
Ex. Std. No. 2	1.15	1.20	1.15	1.20	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....

CANNED VEGETABLES—Continued

Wholegrain—Continued	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
White, Fancy No. 2	1.00	1.15	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	.95	1.10	1.10	.....	.....	.....
No. 10	6.65	.....	.....	.....	.....	.....
Std. No. 2	.87½	.90	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
CORN—Creamstyle						
Yellow, Fancy No. 2	1.15	1.25	.....	1.25	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	1.10	.....	1.05	1.15	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std. No. 2	.97½	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
White, Fancy No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Ex. Std. No. 2	.95	1.00	1.00	1.10	.....	.....
No. 10	.....	.....	5.50	.....	.....	.....
Std. No. 2	.85	.90	.95	1.00	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
HOMINY						
Std. Split, No. 1, Tall	.....	.....	.....	.....	.....	.....
No. 2½	.80	.90	.75	.80	.....	.....
No. 10	.....	.....	2.25	2.60	.....	.....
MIXED VEGETABLES						
Fcy., No. 2	.85	.90	.....	.....	.....	.....
No. 10	4.25	4.25	.....	.....	.....	.....
Std., No. 2	.65	.75	.....	.....	.....	.....
No. 10	3.75	4.00	.....	.....	.....	.....
OKRA AND TOMATOES						
Std., No. 2	.95	.95	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
PEAS						
No. 2 Fancy Sweets, 2s	.....	.....	1.35	1.65	1.35	1.45
No. 2 Fancy Sweets, 3s	.....	.....	1.25	1.50	1.35	1.40
No. 2 Fancy Sweets, 4s	.....	.....	1.15	1.40	1.20	1.30
No. 2 Fancy Sweets, 5s	.....	.....	1.15	1.35	1.15	1.25
No. 2 Ex. Std. Sweets, 2s	.....	.....	1.20	1.40	1.20	1.30
No. 2 Ex. Std. Sweets, 3s	.....	.....	1.10	1.40	1.15	1.25
No. 2 Ex. Std. Sweets, 4s	.....	.....	1.05	1.35	1.15	1.20
No. 2 Ex. Std. Sweets, 5s	.....	.....	1.00	1.25	1.10	1.15
No. 2 Std. Sweets, 2s	.....	.....	1.10	1.25	.....	.....
No. 10 Std. Sweets, 2s	.....	.....	.....	.....	.....	.....
No. 2 Std. Sweets, 3s	.....	.....	.95	1.25	1.15	1.20
No. 10 Std. Sweets, 3s	.....	.....	.....	.....	5.25	5.25
No. 2 Std. Sweets, 4s	.....	.....	.90	1.00	1.00	1.10
No. 10 Std. Sweets, 4s	.....	.....	.....	5.75	5.00	5.25
No. 2 Std. Sweets, 5s	.....	.....	.90	1.00	1.10	1.20
No. 10 Std. Sweets, 5s	.....	.....	.....	.....	4.50	4.50
No. 2 Fcy. Alaskas, 1s	.....	.....	1.50	1.85	.....	.....
No. 2 Fcy Alaskas, 2s	.....	.....	1.40	1.75	1.35	1.45
No. 2 Fcy. Alaskas, 3s	.....	.....	1.20	1.40	1.25	1.35
No. 2 Ex. Std. Alaskas, 1s	1.75	1.90	1.15	1.50	.....	.....
No. 2 Ex. Std. Alaskas, 2s	1.20	1.30	1.15	1.40	1.20	1.40
No. 2 Ex. Std. Alaskas, 3s	1.00	1.00	1.00	1.10	1.15	1.25
No. 2 Ex. Std. Alaskas, 4s	.95	.95	.95	1.10	1.05	1.10
No. 2 Ex. Std. Alaskas, 5s	.....	.....	.....	.....	1.00	1.05
No. 2 Std. Alaskas, 3s	.92½	1.00	.90	1.00	1.05	1.10
No. 10 Std. Alaskas, 3s	5.25	.....	.....	.....	5.25	5.50
No. 2 Std. Alaskas, 4s	.90	.95	.90	1.00	1.00	1.05
No. 10 Fcy. Alaskas, 4s	.....	.....	.....	.....	.....	.....
No. 10 Ex. Std. Alaskas, 3s	.....	.....	5.25	5.50	.....	.....
No. 10 Std. Alaskas, 4s	5.00	5.00	.....	.....	5.00	5.50
No. 2 Std. Alaskas, 5s	.....	.....	.....	.....	1.00	1.05
No. 10 Std. Alaskas, 5s	.....	.....	.....	.....	4.50	4.75
No. 2 Ungraded	.90	.92½	.90	1.00	.95	1.00
Soaked, 2s	.45	.50	.55	.60	.55	.57½
10s	2.50	2.75	.....	.....	3.20	3.40
Blackeye, 2s, Soaked	.75	.75	.....	.....	.....	.....
10s	3.50	3.75	.....	.....	.....	.....
PUMPKIN						
Std., No. 2	.75	.....	.52½	.70	.70	.75
Std., No. 2½	.90	1.15	.67½	1.00	.....	.....
No. 3	.95	.....	.....	.....	.....	.....
No. 10	2.85	3.75	2.50	3.00	2.75	3.00
SAUER KRAUT						
Std., No. 2	.....	.....	.75	.85	.....	.....
No. 2½	.90	1.05	.90	.95	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	2.90	.....	3.10	3.25	.....	.....
SPINACH						
Std., No. 2	.80	.95	.67½	.75	.95	1.02½
No. 2½	1.15	1.25	.90	.95	1.15	1.25
No. 10	3.75	4.00	3.00	3.25	3.75	4.05
SUCCOTASH						
Std. No. 2, Gr. Corn, Dr. Limas	1.05	.....	.....	.....	.....	.....
Std. No. 2, Gr. Corn, Fr. Limas	1.20	.....	.....	.....	.....	.....
Triple, No. 2	.90	1.00	.....	.....	.....	.....

CANNED FRUITS—Continued

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
SWEET POTATOES						
Std., No. 2, Dry Pack	.75	.....	.....	.....	.....	.....
No. 2½	1.10	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Std., No. 2, Syrup Pack	.....	.....	.....	.....	.....	.....
No. 2½	1.20	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
TOMATOES					Solid Pack	
Fancy, No. 2	.90	.....	.....	.....	.95	1.00
No. 2½	.....	.....	.....	.....	1.30	1.45
No. 3	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	4.05	4.50
					With puree	
Ex. Std., No. 1	.47½	.....	.50	.55	.....	.....
No. 2	.75	.85	.77½	.80	.....	.....
No. 2½	1.05	1.15	1.05	1.15	.....	.....
No. 3	1.15	1.25	.....	.....	.....	.....
No. 10	3.50	3.50	3.50	3.75	.....	.....
Std., No. 1	.45	.45	.47½	.50	.60	.62½
No. 2	.70	.70	.72½	.77½	.65	.70
No. 2½	.95	1.00	1.00	1.05	.85	.87½
No. 3	1.10	1.10	.....	.....	.....	.....
No. 10	3.25	3.30	3.50	3.60	2.75	3.00
TOMATO PUREE						
Std., No. 1, Who. St. 1.04	.42½	.....	.45	.47½	.....	.....
No. 10	3.25	.....	3.25	4.00	3.50	3.60
Std., No. 1, Trim 1.035	.40	.....	.....	.....	.....	.....
No. 10	3.00	3.00	.....	.....	3.00	3.25
TOMATO JUICE						
No. 1	.40	.40	.45	.50	.60	.62½
No. 2	.70	.70	.70	.75	.77½	.80
No. 10	2.60	3.00	2.75	3.25	3.00	3.25
TURNIP GREENS						
No. 2	.75	.....	.....	.....	.....	.....
No. 2½	.95	.....	.....	.....	.....	.....
No. 10	3.75	3.75	.....	.....	.....	.....

Canned Fruits

APPLES						
No. 10, water	.....	.....	.....	.....	.....	.....
No. 10, standard heavy pack	4.00	4.10	.....	.....	3.50	4.00
No. 10 fancy heavy pack	4.25	4.50	.....	.....	4.50	.....
APPLE SAUCE						
No. 2 Fancy	.82½	1.00	.90	1.00	.....	.....
No. 10	4.35	5.00	.....	.....	.....	.....
No. 2, Std.	.70	.....	.....	.....	.....	.....
No. 10	.....	.....	4.50	4.75	.....	.....
APRICOTS						
No. 2½, Fancy	.....	.....	.....	.....	1.90	2.00
No. 2½, Choice	.....	.....	.....	.....	1.70	1.80
No. 2½, Std.	.....	.....	.....	.....	1.45	1.50
GRAPEFRUIT						
8 oz.	.....	.....	.....	.....	.45	.....
No. 2	.95	1.00	.....	.....	.87½	.95
No. 5	3.10	.....	.....	.....	2.65	2.75
GRAPEFRUIT JUICE						
8 oz.	.52½	.....	.....	.....	.....	.....
No. 1	.....	.....	.....	.....	.....	.....
No. 300	.80	.80	.....	.....	.....	.....
No. 2	.72½	.85	.....	.....	.70	.80
No. 5	2.50	2.75	.....	.....	2.10	2.25
PEARS						
Keifer, Std., No. 2, in syrup	1.00	1.00	.....	.....	.....	.....
No. 2½	1.35	1.35	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Bartlett, Fancy, No. 2½	.....	.....	.....	.....	1.80	1.90
Choice, No. 2½	.....	.....	.....	.....	1.55	1.75
Std., No. 2½	.....	.....	.....	.....	1.45	1.55
No. 10, Water	.....	.....	.....	.....	.....	4.00
No. 10, Syrup	.....	.....	.....	.....	6.00	6.25
No. 10 Pie, S. P.	.....	.....	.....	.....	3.75	4.25
PEACHES						
Fcy., Y. C., No. 2½	.....	.....	.....	.....	1.70	1.75
Choice, No. 2½	.....	.....	.....	.....	1.55	1.65
Std., No. 2½	.....	.....	.....	.....	1.45	1.50
Ex. Std., Slic. Yel., No. 1 Talls	.....	.....	.....	.....	1.10	1.15
Seconds, Yel., No. 3	.....	.....	.....	.....	.....	.....
Pies, unpeeled, No. 3	.....	.....	.....	.....	.....	.....
Peeled, No. 10, Solid Pack	.....	.....	.....	.....	4.75	5.00
PINEAPPLE						
Hawaiian, Slic., Ex. Std., No. 2	.....	.....	.....	.....	1.50	.....
No. 2½	.....	.....	.....	.....	1.80	.....
Std., No. 2	.....	.....	.....	.....	1.40	.....
No. 2½	.....	.....	.....	.....	1.70	.....
Sliced, Standard, No. 10	.....	.....	.....	.....	5.85	6.10
Shredded, Syrup, No. 10	.....	.....	.....	.....	.....	.....
Crushed, Ex. Std., No. 10	.....	.....	.....	.....	6.00	6.00
PINEAPPLE JUICE						
Buffet	.....	.....	.....	.....	.52½	.55
No. 211	.....	.....	.....	.....	.70	.75
No. 2	.....	.....	.....	.....	1.10	1.15
No. 2½	.....	.....	.....	.....	1.45	1.55
46 oz.	.....	.....	.....	.....	2.50	2.65
No. 10	.....	.....	.....	.....	5.00	5.25

CANNED FRUITS—Continued

	Eastern Low	Eastern High	Central Low	Central High	West Coast Low	West Coast High
FRUITS FOR SALAD						
Fcy., No. 2½	.....	.....	.....	.....	2.45	2.55
No. 10	.....	.....	.....	.....	8.50	8.75
BLACKBERRIES						
Std., No. 2	.....	.....	.....	.....	.....	.....
No. 3	.....	.....	.....	.....	.....	.....
No. 10, water	.....	.....	.....	.....	.....	.....
No. 2, Preserved	.....	.....	.....	.....	.....	.....
No. 2, Syrup	.....	.....	.....	.....	.....	.....
BLUEBERRIES						
No. 2	1.75	1.85	.....	.....	.....	.....
No. 10	7.00	7.00	9.50	10.00	.....	.....
CHERRIES						
Std., Red, Water, No. 2	.....	.....	.....	.....	.....	.....
Std., White, Syrup, No. 2	.....	.....	.....	.....	.....	.....
Ex. Std., Preserved, No. 2	.....	.....	.....	.....	.....	.....
Red Sour Pitted, No. 2	1.30	1.35	.....	.....	.....	.....
Red Sour Pitted, No. 10	.....	.....	10.00	12.00	.....	.....
R. A., Fcy., No. 2½	.....	.....	.....	.....	2.45	2.50
Choice, No. 2½	.....	.....	.....	.....	2.25	2.35
Std., No. 2½	.....	.....	.....	.....	2.00	2.10
GOOSEBERRIES						
Std., No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	6.00	6.00
RASPBERRIES						
Black, Water, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	.....
Red, Water, No. 2	.....	.....	.....	.....	.....	.....
No. 10	.....	.....	.....	.....	.....	6.50
Black, Syrup, No. 2	.....	.....	.....	.....	.....	.....
Red, Syrup, No. 2	.....	.....	.....	.....	.....	.....
STRAWBERRIES						
Ex. Pres., No. 1	.....	.....	.....	.....	.....	.....
No. 2	.....	.....	.....	.....	.....	.....
Pres., No. 1	.....	.....	.....	.....	.....	.....
No. 2	.....	.....	.....	.....	.....	.....
Std., Water, No. 10	.....	.....	.....	.....	.....	.....

Canned Fish

HERRING ROE						
10 oz.	1.50	1.50	.....	.....	.....	.....
No. 2, 17 oz.	1.75	1.75	.....	.....	.....	.....
No. 2, 19 oz.	2.00	2.00	.....	.....	.....	.....
LOBSTER						
Flats, 1 lb.	6.50	6.50	.....	.....	.....	.....
½ lb.	3.25	3.25	.....	.....	.....	.....
¼ lb.	1.95	1.95	.....	.....	.....	.....
OYSTERS						
Std., 4 oz.	.95	1.00	.....	.....	.....	.....
5 oz.	1.05	1.10	.....	.....	.....	.....
8 oz.	1.90	2.00	.....	.....	.....	.....
10 oz.	2.10	2.15	.....	.....	.....	.....
Selects, 6 oz.	.....	.....	.....	.....	.....	.....
SALMON						
Red Alaskas, Tall, No. 1	.....	.....	.....	.....	.....	2.25
Flat, No. ½	.....	.....	.....	.....	1.50	1.55
Cohoes, Tall, No. 1	.....	.....	.....	.....	.....	1.75
Flat, No. 1	.....	.....	.....	.....	1.90	1.90
No. ½	.....	.....	.....	.....	1.15	1.15
Pink, Tall, No. 1	.....	.....	.....	.....	1.10	.....
Flat, No. ½	.....	.....	.....	.....	.75	.75
Sockeye Flat, No. 1	.....	.....	.....	.....	2.65	2.65
No. ½	.....	.....	.....	.....	1.75	1.85
Chums, Tall, No. 1	.....	.....	.....	.....	1.00	.....
Medium, Red, Tall	.....	.....	.....	.....	1.70	.....
SHRIMP						
No. 1, Small	.....	.....	1.45	1.47½	.....	.....
No. 1, Medium	.....	.....	1.45	1.60	.....	.....
No. 1, Large	.....	.....	1.60	1.62½	.....	.....
SARDINES (Domestic), Per Case						
¼ Oil, Key	3.60	3.60	.....	.....	.....	.....
¼ Oil, Keyless	3.25	3.35	.....	.....	.....	.....
¼ Oil, Tomato, Carton	.....	.....	.....	.....	.....	.....
¼ Oil, Carton	3.90	3.90	.....	.....	.....	.....
¾ Mustard, Keyless	2.75	2.85	.....	.....	.....	.....
Calif. Oval No. 1, 24's	.....	.....	.....	.....	1.40	1.55
Calif. Oval No. 1, 48's	.....	.....	.....	.....	2.75	3.00
TUNA FISH, Per Case						
Fcy., Yel., 1s, 24's	.....	.....	.....	.....	.....	6.02½
Fcy., Yel., 1s, 48's	.....	.....	.....	.....	11.00	12.00
½s	.....	.....	.....	.....	.....	6.00
¼s	.....	.....	.....	.....	3.85	4.25
Light Meat, 1s	.....	.....	.....	.....	9.00	10.00
½s	.....	.....	.....	.....	5.00	5.50
¼s	.....	.....	.....	.....	3.50	3.75

WHERE TO BUY

—— the Machinery and Supplies you need, and the Leading Houses that supply them. Consult the advertisements for details.

ADHESIVES.
Dewey & Almy Chemical Co., Cambridge, Mass.
F. G. Findley Co., Milwaukee, Wis.

ADJUSTERS for Detachable Chains.
Frank Hamachek Mach. Co., Kewaunee, Wis.

BASKETS, Picking.
Planters Mfg. Co., Portsmouth, Va.
Riverside Manufacturing Co., Murfreesboro, N. C.
Baskets, Wire, Scalding, Pickling, etc. See Cannery Supplies.

BEAN SNIPPER, Green String.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

BEET MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

BELTS, Carrier, Rubber, Wire, Etc.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
La Porte Mat and Mfg. Co., La Porte, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

BLANCHERS, Vegetable and Fruit.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

BOILERS AND ENGINES, Steam.
Berlin-Chapman Co., Berlin, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

BOOKS, on Canning, Formula, Etc.
A Complete Course in Canning.
How to Buy and Sell Canned Foods.
A History of the Canning Industry.
The Almanac of the Canning Industry.
All published by The Canning Trade, Baltimore.
Bottle Caps. See Caps.
Bottle Cases, Wood. See Boxes, Crates.
Bottle Corking Machines. See Bottlers Mchy.

BOX (Corrugated) SEALING MACHINES.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

BOXES, Corrugated Liner-Joint.
David Weber & Co., Philadelphia, Pa.

BOXES, Lug, Field, Metal.
Berlin-Chapman Co., Berlin, Wis.
Frank Hamachek Mach. Co., Kewaunee, Wis.

BOXING MACHINES.
Burt Machine Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.
Westminster Mach. Co., Westminster, Md.

BROKERS.
Phillips Sales Co., Cambridge, Md.
Buckets and Pails, Fibre. See Corr. Paper Products.
Buckets and Pails, Metal. See Enameled Buckets.
Buckets, Wood. See Cannery Supplies.

BURNERS, Oil, Gas, Gasoline, Etc.
A. K. Robins & Co., Inc., Baltimore, Md.
Can Conveyors. See Conveyors and Carriers.
Can Fillers. See Filling Machines.

CAN MAKERS' MACHINERY.
Cameron Can Mchy. Co., Chicago, Ill.
Can Markers. See Stampers and Markers.

CANNED FOODS.
Indiana Canners Association, Indianapolis, Ind.
Phillips Packing Co., Cambridge, Md.
Phillips Sales Co., Cambridge, Md.

CANS, Tin, All Kinds.
American Can Co., New York City.
Continental Can Co., New York City.
Crown Can Co., Philadelphia, Pa.
Heekin Can Co., Cincinnati, Ohio.
National Can Co., Inc., New York-Baltimore.
Phelps Can Co., Baltimore, Md.
Phillips Can Co., Cambridge, Md.

CAN SEALING COMPOUND.
Dewey & Almy Chemical Co., Cambridge, Mass.

CAN TESTING MACHINERY.
Cameron Can Machinery Co., Chicago, Ill.

CAN WASHING MACHINES.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

CANNERY SUPPLIES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Can Stampers. See Stampers and Markers.

CAPPING MACHINES, Soldering.
Ayars Machine Co., Salem, N. J.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Capping Steels, Soldering. See Cannery Sup.

CARRIERS AND CONVEYORS, Spiral.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Catsup Machinery. For the preparatory work: see Pulp Mchy.; for bottling: see Bot. Mchy.

CHAIN ADJUSTERS.
F. Hamachek Machine Co., Kewaunee, Wis.
Chain Belt Conveyors. See Conveyors.
Chain for Elevating, Conveying. See Conveyors.
Checks, Employers' Time. See Stencils.
Chutes, Gravity, Spiral. See Carriers.

CLEANING AND GRADING MACHY., Fruits.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Cleaning and Washing Machines, Bottle. See Bottlers' Machinery.
Cleaning Machines, Can. See Can Washers.

CLOCKS, Process Time.
Ayars Machine Co., Salem, N. J.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CLOSING MACHINES, Open Top Cans.
Cameron Can Mchy. Co., Chicago, Ill.
Coils, Copper. See Copper Coils.

CONVEYORS AND CARRIERS, Canners.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
La Porte Mat & Mfg. Co., La Porte, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

COOKERS, Continuous, Agitating.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Cookers, Retorts. See Kettles, Process.

COOLERS, Continuous.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

COPPER COILS, for tanks.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Copper Jacketed Kettles. See Kettles, Copper.

CORN COOKER-FILLERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

CORN CUTTERS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

CORN HUSKERS AND SILKERS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

CORN SHAKERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

CRANES AND CARRYING MACHINES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CRATES, Iron Process.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

CUTTERS, Vegetable, Mincemeat, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

DECORATED TIN (or Cans, Caps, Etc.).
American Can Co., New York City.
Continental Can Co., New York City.
Crown Can Co., Philadelphia, Pa.
National Can Co., New York-Baltimore.

DUSTS & SPRAYS (insect control).
Agicide Laboratories, Milwaukee, Wis.

ENAMELED BUCKETS, PAILS, Etc.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Engines, Steam. See Boilers and Engines.

ENSILAGE DISTRIBUTORS.
Frank Hamachek Mach. Co., Kewaunee, Wis.

EVAPORATING MACHINERY.
Berlin-Chapman Co., Berlin, Wis.

EXHAUST BOXES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

FACTORY TRUCKS.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

FIBRE CONTAINERS for Food (not hermetically sealed).
American Can Co., New York City.
Continental Can Co., New York City.
Filling Machines, Bottles. See Bottlers' Mchy.

FILLING MACHINES, Can.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
E. J. Judge, Alameda, Cal.
A. K. Robins & Co., Inc., Baltimore, Md.

FINISHING MACHINES, Catsup, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

GENERAL AGENTS for Machinery Mfrs.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

GLASS LINED TANKS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Gravity Carriers. See Carriers and Conveyors.
Hoisting and Carrying Machines. See Cranes.
Hullers and Viners. See Pea Hullers.
Huskers and Silkers. See Corn Huskers.

WHERE TO BUY — Continued

HYDRAULIC CONVEYING EQUIPMENT.
Berlin-Chapman Co., Berlin, Wis.
Scott Viner Co., Columbus, Ohio.

INSECTICIDES.
Agicide Laboratories, Milwaukee, Wis.

INSURANCE, Canners.
Canners' Exchange, Lansing B. Warner, Chicago.
Jacketed Kettles. See Kettles, Copper.

JACKETED PANS, Steam.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

KETTLES, Copper, Plain or Jacketed.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Kettles, Enameled. See Glass-Lined Tanks.

KETTLES, Process.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

KNIVES, Miscellaneous.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.

KRAUT CUTTERS.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

KRAUT MACHINERY.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

LABELING MACHINES.
Burt Machine Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore, Md.
Westminster Mach. Co., Westminster, Md.

LABEL MANUFACTURERS.
Gamse Litho. Co., Baltimore, Md.
Lehmann Printing & Litho. Co., San Francisco, Cal.
Piedmont Label Co., Bedford, Va.
Simpson & Doeller Co., Baltimore, Md.
U. S. Printing & Lithograph Co., Cincinnati, Ohio.

LABORATORIES, for Analyses of Goods, Etc.
National Canners Assn., Washington, D. C.

MILK CONDENSING AND CANNING MCHY.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

OYSTER CANNERS' MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PAILS (Rubber).
Dewey & Almy Chemical Co., Cambridge, Mass.

PASTE, CANNERS'.
Burt Machine Co., Baltimore, Md.
Dewey & Almy Chemical Co., Cambridge, Mass.
F. G. Findley Co., Milwaukee, Wis.
F. H. Langsenkamp & Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PEA HULLERS AND VINERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

PEA AND BEAN SEED.
Associated Seed Growers, Inc., New Haven, Conn.
Gallatin Valley Seed Co., Bozeman, Mont.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
Rogers Bros. Seed Co., Chicago, Ill.
F. H. Woodruff & Sons, Milford, Conn.

PEA CANNERS' MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. Hamachek Mach. Co., Kewaunee, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

PEA VINE FEEDERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.

PEELING KNIVES.
Ayars Machine Co., Salem, N. J.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PEELING TABLES, Continuous.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PINEAPPLE MACHINERY.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

PRESERVERS' MACHINERY.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PULP MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

PUMPS, Air, Water, Brine, Syrup.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SEALING MACHINES, Box.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SCALDERS, Tomato, Etc.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.

Scalding and Picking Baskets. See Baskets.
Sealing Machines, Bottles. See Bottlers' Mchy.

SEEDS, Canners', All Varieties.
Associated Seed Growers, Inc., New Haven, Conn.
Gallatin Valley Seed Co., Bozeman, Mont.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
O. & M. Seed Co., Green Springs, Ohio.
Rogers Bros. Seed Co., Chicago, Ill.
F. H. Woodruff & Sons, Milford, Conn.

SHEET METAL WORKING MACHINERY.
Cameron Can Mchy. Co., Chicago, Ill.

SIEVES AND SCREENS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

SILKING MACHINES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
The United Co., Westminster, Md.

SPEED REGULATING DEVICES (for Machines. Belt Drives, Etc.).
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
E. J. Judge, Alameda, Cal.
A. K. Robins & Co., Inc., Baltimore, Md.

SPRAYS & DUSTS (insect control).
Agicide Laboratories, Milwaukee, Wis.

STENCILS, Marking Pots and Brushes, Brass Checks, Rubber and Steel Type, Burning Brands, Etc.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

Steam Jacketed Kettles. See Kettles.
Steam Retorts. See Kettles, Process.

STIRRERS FOR KETTLES.
Berlin-Chapman Co., Berlin, Wis.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

STRING BEAN MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
B. I. Buck Co., Baltimore, Md.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

SYRUPING MACHINES.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
E. J. Judge, Alameda, Calif.
A. K. Robins & Co., Inc., Baltimore, Md.

Tables, Picking. See Canners' Machinery.

TANKS, Metal.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TANKS, Glass Lined, Steel.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.

TANKS, Wooden.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO CANNING MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO JUICE MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO PEELING MACHINE.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

TOMATO SEED.
Associated Seed Growers, Inc., New Haven, Conn.
Indiana Canners Association, Indianapolis, Ind.
D. Landreth Seed Co., Bristol, Pa.
Leonard Seed Co., Chicago, Ill.
C. A. Shuttleworth Seed Co., Matthews, Ind.
Francis C. Stokes & Co., Inc., Moorestown, N. J.
F. H. Woodruff & Sons, Milford, Conn.

TOMATO WASHERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore, Md.

VEGETABLE CUTTERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore, Md.

VINERS AND HULLERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Frank Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

Washers, Bottles. See Bottlers' Machinery.

WASHERS, Can and Jar.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore, Md.

WASHERS, Fruit, Vegetable.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Food Machinery Corporation, Hoopeston, Ill.
A. K. Robins & Co., Inc., Baltimore, Md.
Scott Viner Co., Columbus, Ohio.
Sinclair-Scott Co., Baltimore, Md.

Windmills and Water Supply Systems. See Tanks, Wood.

AYARS Standard

PEA & BEAN FILLER

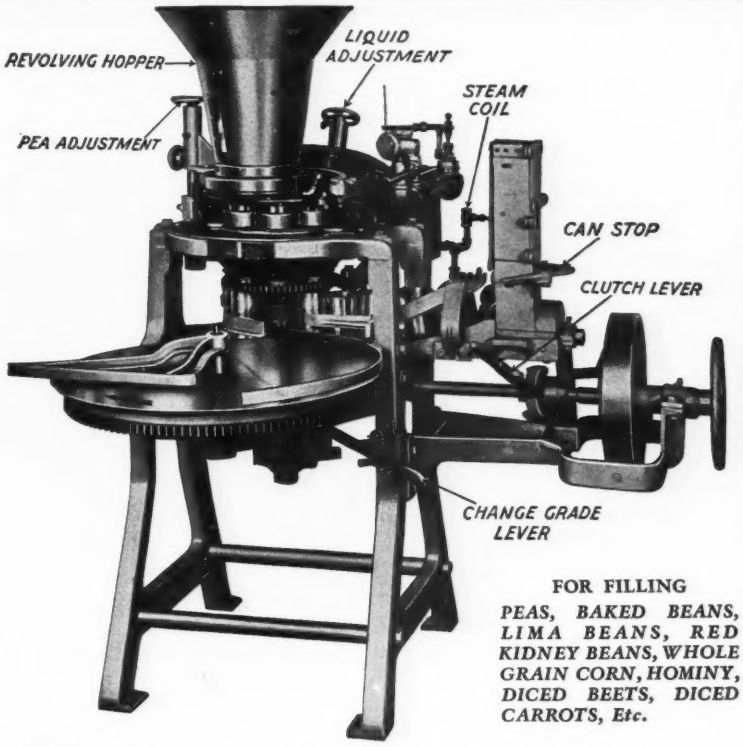
Only Filler on market with slowly revolving Hopper.

Hopper revolves slowly in opposite direction from the way filling pockets revolve assuring absolute uniform fill.

No-Can-No-Fill attachment that works perfectly.

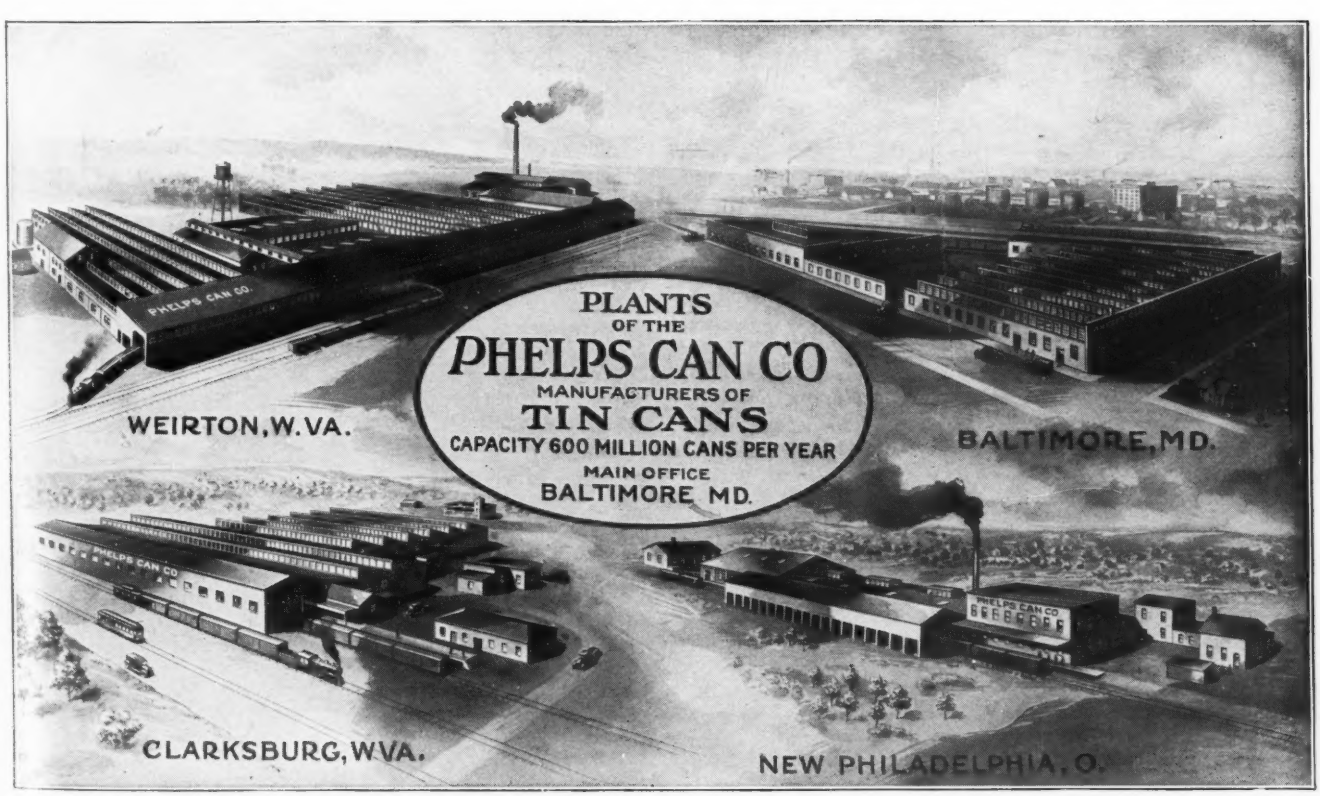
Fills all grades, even small sticky peas without any variation in the fill.

Large Brine Tank Assures hot brine at all times.

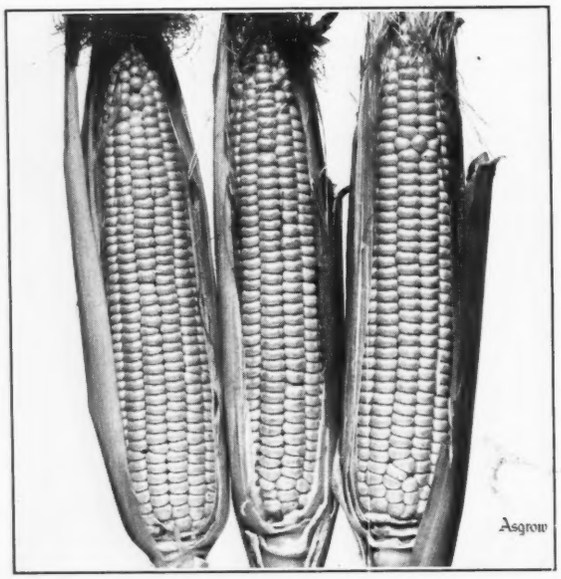


FOR FILLING
PEAS, BAKED BEANS, LIMA BEANS, RED KIDNEY BEANS, WHOLE GRAIN CORN, HOMINY, DICED BEETS, DICED CARROTS, Etc.

AYARS MACHINE COMPANY, Salem, New Jersey



GOLDEN CROSS BANTAM



The large, well-filled ears, uniform in size and maturity, for which this great hybrid is justly famed are only to be expected from seed that has been correctly produced. That is, first generation seed from completely pure-lined parent inbreds, entirely free of outside pollen contamination.

YOU CAN SEE THEREFORE, HOW ESSENTIAL IT IS TO GET YOUR SUPPLIES FROM SOURCES OF KNOWN ABILITY AND EXPERIENCE.

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For spot shipment or under future contract

Full particulars of other hybrids gladly sent on application

Associated Seed Growers, Inc.

Breeders and Growers of Vegetable Seeds since 1856

New Haven, Connecticut

BREEDING STATIONS AND PRODUCTION BRANCHES FROM COAST TO COAST